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LECTURES
ON
COMPARATIVE ANATOMY
AND
ANIMAL PHYSIOLOGY,

DELIVERED BY

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LECTURE XIII.

ON THE OSTEOLOGY OF FISHES.

I HAVE now spoken generally of the development of the vertebral column in fishes, and of the parts which are immediately developed from it.

We observe, in the great development of this central pillar and first rudiment of the skeleton, and in the small developments of the other parts of fishes, an illustration of a law which has been much insisted upon by the French anatomists, and which they have called the *balancing of organs*: by which, when one part of the skeleton, or other systems of the body, is much enlarged, the parts that are most immediately connected with that have a small or retarded development. Thus the great development of one part is said to be balanced by the imperfect development of others.

You will observe that from the great development of the vertebral column in fishes, and those primary elements which are immediately developed from that as a centre, that the anterior and posterior extremities are but small in this class of animals.

This law does not enable us to explain much, although we find many structures here, and also in higher classes, which correspond with that general announcement. We see, for instance, that in serpents the vertebral column forms almost the whole of their skeleton; that that vertebral column is extraordinary for its length, for the number of its pieces, for its density; and this is considered as a development of the vertebral column, increased at the expense of all the other parts of the skeleton, for they have neither legs nor arms.

But it does not appear to hold universally. You will observe, in the mammiferous animals, that the bat has its anterior extremities enormously developed for the purpose of motion through the air, but its head and thorax, and the anterior part of the vertebral column, suffer nothing from this. The kangaroo has the posterior part of its vertebral column—its tail—very largely developed, yet its posterior extremities suffer nothing from that; they are enormously developed compared with the anterior.

In speaking of the anterior part of the vertebral column, we have shown an analogy between the condition of the osseous part of the head in the cartilaginous fishes, and the embryo condition, or the cartilaginous condition, of that part of the human body; that in both cases it is not subdivided into pieces—that subdivision is the result of ossification.

In the osseous fishes, then, the centres of ossification have commenced; they remain permanently detached, and thus we have a key to their whole osteology. The osseous part of the head is enlarged, chiefly to give extensive attachment to muscles, and to give place to large organs of the senses, which are here of great size on account of the smallness of the brain. Those parts continue to grow through life. You will observe that the bones of the head of fishes do not unite by serrated sutures; that would tend to check their continued enlargement, to arrest their development, particularly from the crystalline mode of ossification we observe in the bones of this class—the spicular ar-

rangement, the fibrous radiations which we find traversing all their transparent elastic bones. When they meet, they shoot over each other; they pass like the temporal bone in the human skull, shooting over the parietal bone; they unite, in fact, by squamous sutures.

This allows the head—the cranial cavity—all parts of the osseous structure of the head of fishes, to grow through the whole of life.

The cerebral ganglia, therefore, lying at the bottom of the cavity of the cranium of fishes, their brain, is observed to be proportionably large in the young fishes compared with the bulk of the whole body, and compared with the condition which it presents at maturity. Measured at that period, therefore, you find that it fills a larger proportion of the cavity of the skull in the young state, and that it fills a much smaller proportion of the large cavity of the skull in the adult state, which shows you that the skull had continued to grow when the brain had stopped or been retarded in the march of its development. The intervening spaces between the brain and the bones of the skull are thus further filled up by an increased development of the arachnoid coat, that soft, fine, glairy substance which you find filling all the upper parts of the skulls of fishes, and placed between the *pia mater* covering the brain, and the *dura mater* lining the cranial bones.

In the bones of the head, and in the other bones of the skeleton of fishes, you do not find cavities for the lodgment of marrow, these are developed chiefly in the hot-blooded animals. They are for the most part, therefore, slender bones, containing a large proportion of aqueous and of animal matter. It is this great proportion of cartilaginous matter which gives that glistening surface to the bones of osseous fishes in the recent state, particularly when they are dried or boiled, and their toughness, elasticity, and transparency.

It appears to be the same abundance of animal matter in proportion to the phosphate and carbonate of lime, and the magnesia which is found in the bones of osseous fishes, that produce that dark, charred colour, and that glistening surface, which you see in these fossil remains of fishes. Were the proportion of those earthy matters in the bones of fishes to the animal matter as great as in birds and quadrupeds, in place of these dark, glistening, almost black fossil bones, of fishes which I hold in my hand, you would have had these bones of a beautiful white colour, such as you see in the fossil bones of quadrupeds.

Thus, you observe, that an acquaintance even with the texture of the recent bones of animals gives the geologist some slight assistance in deciphering the fossil, and in forming a first notion of the class of animals to which it may have belonged, before he attains to a knowledge of the form of the bone, and proceeds at length to his more minute comparisons to arrive at the determination of the genus and the species.

In speaking of the vertebral column, I directed your attention to the transverse processes, very important elements, which we observe extending from the sides, as well as to the spinous processes above and below. We saw the manner in which the transverse processes in fishes are bent down to meet below in the coccygeal region, so as to produce there the inferior spinous processes—a structure which you do not find in the higher classes of animals where the transverse processes have an existence separate from the inferior spinous processes, as we see in the skeleton of the porpoise and other cetaceous animals, although these detached inferior spinous processes may be considered to have been originally derived from the transverse.

The reason why these transverse processes are present in the cetaceous animals, and for the most part absent in the coccygeal region of fishes, is, because the vertebral column in fishes, as in the tadpoles of *amphibia*, must move from side to side; in the cetaceous animals the vertebral column moves downwards and upwards.

This you observe from the direction of the tail, which in fishes is perpendicular, but in the cetaceous animals it is horizontal. It is perpendicular in fishes, because they do not require to ascend to the surface of the water to breathe atmospheric air; they breathe the air contained in the medium in which they reside. The cetaceous animals have the tail directed horizontally, because they must strike down the tail to raise the head up to come to the surface to breathe atmospheric air by means of lungs; they must strike the tail upwards to direct the body downwards to save themselves and their young in the depths of the sea, or to pursue their prey.

Fishes, therefore, you perceive, are organised to move in a dense element, and in a horizontal plane; this they do by causing the tail to sweep from side to side, and to strike forcibly backwards the water; they do it partly by the elasticity we have seen in the vertebral column, by the elastic balls filled with a liquid matter placed between the bodies of the vertebræ, and partly by the vigour of the large and

numerous muscles which we shall see hereafter disposed in strata, and covering the whole sides of this vertebral column.

It must strike you as remarkable in the vertebral column of fishes, particularly as this is the first internal vertebral column, which, in ascending from the animalcules, we have met with thus divided into parts, that there is here no sacrum, such as you see in the human body. By the sacrum we mean, in comparative anatomy, a fixed part of the vertebral column for the attachment of posterior extremities. It may consist of one vertebra, as it does in the frog; it may consist of two vertebræ anchylosed together, as it does in many of the saurian reptiles; frequently we meet with three vertebræ in the quadruminous mammalia; in the human body we have as many as five, but in birds we shall see twenty of them consolidated into one portion to form an enormous sacrum. Those are vertebræ which are anchylosed together, so as to give a solid attachment to the posterior extremities, the pillars upon which that part of the animal's trunk is to rest.

The posterior extremities of fishes are never attached to the vertebral column. However slight the obstruction to the motions of the vertebral column, which they would produce by shooting up the two iliac bones to be attached to the sides, they would produce an impediment to the lateral motions of the column; they would require transverse processes to be developed for their articulation, which would be of themselves a powerful impediment to lateral motion, and they would require vertebræ of a form entirely different from the normal character of this class.

The animals that come nearest to fishes in the flexibility of their coccygeal region, and in the whole of the posterior part of their vertebral column, are the cetaceous animals, and they have no trace of a sacrum. From the cervical vertebræ backwards to the last of the coccygeal vertebræ, you see in the porpoise, as in the fish before you, that all the vertebræ have a like freedom of motion; that no sacrum could be formed on the vertebral column of a fish, or of a serpent, or of a cetaceous animal, for there are no vertebræ in the column which are placed in those fixed conditions that produce a sacrum in higher animals, nor is there a trace of sacrum till the legs develop in man and mammalia; all the vertebræ are alike free till that period.

The fixing of the transverse processes of any part of the vertebral column, is effected by the firm attachment of iliac bones to them, which prevents a motion between the bodies of those vertebræ, and in the progress of growth they unite and anchylose, and thereby produce a sacrum; but there is no portion here of the vertebral column so fixed, every part of the posterior portion of the column being alike exerted in the natural movements of the animal; they are kept alike detached.

In the course of this vertebral column, you observe that where the ribs cease, and where the transverse processes unite together, rings are formed. The first of these rings behind the anus you might call the first coccygeal vertebra—that vertebra which contains the first completely formed ring. It is from this part that the first or most anterior interspinous bone can be developed below, and the first part from which a ray may extend downwards on the median line. There can be no rays, there can be no fins, on the median line in the abdominal region of a fish, because there are no spinous processes shooting down on the whole of the abdominal region, till we come to that first coccygeal vertebra behind the anus, where the two transverse processes unite, and form the descending spinous process. Then the development outward from that spinous process gives rise to the new interspinous bone, and that, by being prolonged, gives rise to the ray shooting from the body to support an anal fin. Thus there can be no abdominal fins on the median plane anterior to the anus. The fins which we observe anterior to the anus, and towards the lower surface of the body, are always in pairs, and there are only two pairs so situated—the pectoral and the ventral fins—the arms and the legs of the fishes.

As we have got, I may say, to the primitive source of some important parts of the skeleton, let us observe another change that takes place. When parts have thus got a separate centre of development, and have become detached normal elements of the skeleton, from the part that originally developed them, they may shift to and fro their places. That you can see, first of all, in the inter-spinous bones, shooting out originally in a straight line from the termination of the spinous processes; they may be, and generally are, thrust in between the spinous processes, as you observe in this *perch*, and in this *lophius*, or the common frog fish. In them these interspinous bones are thrust down between the spinous processes, whereas in the anterior part of this skeleton of the cod, and throughout most of the back of that animal, you observe they are placed in a line with the termination of the spinous processes.

Upon taking a view of some of the forms of fishes which are most different from each other, you perceive that the position

of the inter-spinous bones effects important changes in the form of the whole body. In these flat fishes, the chætodons, which I have now in my hand, the back is remarkably elevated, and the abdominal region is extended narrow downwards, the sides being extremely compressed.

This flatness of the sides and great extension upwards and downwards, are produced by the development of the superior and inferior *spinous processes* to a great extent—a great development of the *inter-spinous bones* both above and below; and sometimes even the integuments covered with scales, mount up over a part of the *rays* both above and below. That you perceive in these beautifully-coloured *chætodons* which I now show you.

Thus we see, that the central part, and the source of all the other pieces of the skeleton, is formed by the vertebral column in the lowest of the vertebrated classes, as in the corresponding embryo condition of the human skeleton. And this vertebral column develops superior and inferior arches to surround and protect importaat parts, and to afford surface for the attachment of muscles.

But those two arches which are so obvious in the coccygeal region of the skeleton of fishes for the lodgement of the spinal marrow above, and the bloodvessels below the bodies of the vertebræ, can be traced forward along the column to the most anterior of the cephalic vertebræ. As those vertebral arches have often to enclose and extend over large and important organs both above and below the bodies of the vertebræ, like the brain in the superior canal of the cranial vertebræ, and the thoracic and abdominal viscera in the inferior canal of the vertebræ of the trunk, they must present a very different appearance and form from those which they exhibit when they surround only a nervous chord, or an artery and vein, as they do in the coccygeal region.

But in examining the forms of those arches even which attain to the greatest size, as the ribs, the scapular arch, the os hyoides, the lower jaw, in the class of fishes where these bones may be considered as near their origin, or in their first forms among the vertebrata, we see that they have all the simple rib-like form of mere enlarged transverse processes, and that they have here the closest resemblance to each other, although in higher classes these primary arches differ so much in form from each other, and from ribs, that we could scarcely recognise them as analogous parts of the skeleton. The extremities themselves are but radiations or developments from these primary arches. The first of those inferior arches which I shall point out, is the lower jaw. This part in fishes consists of numerous bones, which seldom unite or anchylose in the median plane, as they do at a very early period in birds and in many of the mammalia. They are thrown to a considerable distance behind from the axis of the vertebral column, by the great development of the tympanic elements of the temporal bones.

These elements remain also detached from each other in the lower jaw of most of the other cold-blooded vertebrata, but they are fewer in number in the lower jaw of fishes than of reptiles; and some, as Blainville, have thought that the opercular bones of fishes, attached behind the lower jaw, originated from the elements of this jaw, which are so generally deficient. The two pieces on each side most constant in fishes are, that which receives and supports the teeth (34), and that (35) by which the jaw is articulated to the temporal bone.

The os hyoides is an arch of great magnitude in this class from its connexion with the respiratory branchiæ. It consists of numerous pieces attached, like the other cephalic arches, to the sides of the cranial portion of the vertebral column. It consists often in the vertebrated classes of eleven bones. In the human body, two of those eleven bones are anchylosed to the temporal bone; and in the human temporal bone we call them styloid processes; but these are portions of the os hyoides in other animals: they are the stylo-hyoid bones or elements, as they have been named by Geoffroy.

The human body is remarkable for the imperfect development of all the elements of this bone, so important in all the water-breathing vertebrated animals. These stylo-hyoid elements, however, in the inferior mammalia, are detached bones, and belong to the hyoid. The hyoid bone in fishes is enormously developed. It forms this large arch in the *lophius piscatorius*,—the second arch, the one placed behind the lower jaw, and before the meeting of the coracoid bones. This os hyoides is larger in fishes, tadpoles, and perennibranchiate amphibia, than in any other animals.

It is to the sides of the os hyoides that are attached the branchial arches; the four solid tracheal arches upon each side, to which the branchiæ or gills are attached, and which become cartilaginous rings of the trachea in higher animals. It is by the motion of the os hyoides chiefly that the function of respiration in fishes, as in some higher animals, as *amphibia* and *chelonia*, is effected. It is by the retracting of that bone that the opercula chiefly are thrust asunder, and water is forced inwards through the mouth. The water

cannot rush inwards by the back part of the operculum, because there is a branchiostegous membrane supported by opercular rays that form a soft and flexible valve, which, by the pressure of water without and the vacuum formed within, is completely closed behind, so that the water must rush in at the anterior part.

Thus the os hyoides performs an important function in the respiration of fishes, independently of the support it gives to the very short, soft, fleshy tongue, and to the branchial arches. The branchial arches are connected with the os hyoides, which, by extending backwards, behind these arches, produces a true thoracic sternum, considering the branchial apparatus as analogous to the ribs for respiration, as you observe in this shark.

Continued backwards, from the back part of the os hyoides, you observe a central prolongation, connecting the terminations of the branchial arches. These, in fact, are the only complete ribs in fishes, for behind these, you observe that the ribs have no sternum; that they are, therefore, "false" ribs, as we call them in human anatomy. It is from the aquatic respiration continuing through the whole of life in fishes, that these branchial arches are so largely developed, and by performing the functions of true ribs, they render these bones less necessary behind, and thus retard their development. Fishes are enormous tadpoles, destined never to change to an aerial respiration. Suspended in the dense element of the sea through their whole career, they develop in bulk, but never advance in their organization by a metamorphosis. We see the fishes half metamorphosed in the *siren*, the *proteus*, and the *axolotl*, which constantly retain their branchiæ, but have their air-bag beginning to serve for aerial respiration.

Behind the lower jaw you observe the opercular bones (P^s 2), consisting generally of the operculum (28), the sub-operculum (32), and the inter-operculum (33).

At first view these bones appear very different from any bones which we find in the human skull; for, in the other parts of the skull of fishes, we can see the ordinary elements that are found in the human skull; but this operculum, composed of several pieces, we find to be supported by bones, which have received names according to their position in the operculum—the operculum that covers the branchial openings on the side of the neck of fishes. The first is called the operculum (P^s 2, *b*), or opercular bone; the second, the sub-operculum (P^s 2, *c*); and there is another which is called the inter-operculum (P^s 2, *e*).

These are the three principal bones which we find entering into the composition of this osseous covering. A small additional piece (P^s 2, *d*), however, was discovered by GEOFFROY in the pike, and is found in many others—a fourth bone attached to the lower margin of the sub-operculum. Those were considered as pieces altogether peculiar, specially formed for the purposes of the fish, in order that it might have a means of motion in that part of the neck for respiration, and for progressive motion. From observation, however, it is found that parts often change very much in their form according to their uses.

This we might illustrate by all parts of the skeleton of fishes. The hands of the fishes, for instance, have assumed a large development compared with the rest of the arms, for the motions of that animal in the water; so the feet have received a great development, compared with the rest of the leg; so the spinous processes, and various parts of the body, have forms unusual in higher classes, and have acquired a great development, in proportion to their magnitude in the skeleton of higher animals. There is a tendency to the development in length in many of the bones of the head of fishes, from the spicular mode of their ossification, and from their squamous mode of overlopping each other, as in the parts I have just mentioned.

Fishes have generally the semicircular canals, lying in the interior of the wide cavity of the skull—not enclosed within the substance of the temporal bone, but internally to it altogether—in the interior and at the sides of the cavity of the cranium; and we observe that these semicircular canals thus, as it were free from restraint in their development, not confined by solid parietes to a narrow space, acquire an enormous development. We shall see, hereafter, that these semicircular canals are differently placed where the skeleton is soft and cartilaginous.

There is no tympanum in fishes—that is, a part which has relation to sounds received through the atmosphere—a part to receive and transmit undulations or impressions derived from the attenuated atmosphere. The small bones of the tympanum, therefore, we do not at first per-

ceive, for there is no such cavity in osseous fishes, nor anything analogous to it,—that is not yet required, as they do not change their aquatic or larva state. But the bones of the tympanum, which are connected with the cranium, might possibly in fishes, it was conceived, have undergone the same changes without, as the other parts of the ear within, the skull. We see distinctly that these internal parts have undergone a great development; so might those free external bones, which were afterwards to be confined in air-breathing animals to a very small space. In the highest forms of these animals, and in man, they form the bones of the tympanum.

The first bone of the tympanum, in extending outwards from the petrous bone, would be the stapes (P^a 1, *b*), for the rounded part or base of the stapes, is almost inserted into the fenestra ovalis; and if the ossification were to proceed from the one bone to the other in the slightest degree, it would anchylose that bone to the rest of the temporal bone. The bone which is found in the operculum of the fish, next to the temporal bone, is the largest, and somewhat in the form of the *stapes*. It is the bone which is called the "stapeal" by Geoffroy.

The next bone to the *stapes*, the one which is inserted betwixt it and the *incus*, is the small *os orbiculare* (P^a 1, *b*), which is the second bone or sub-operculum. The most distant bone of all proceeding from the temporal bone, the one in immediate connexion with the tympanic or *pre-opercular* bone (30) itself, is the *inter-operculum* or malleal (P^a 1, *e*) of Geoffroy. The small fourth bone of the human ear, the *incus* (P^a 1, *d*), was one that for some time was thought to be wanting in fishes, but at last it was found entering into the osseous part of the operculum.

Thus, in the operculum of fishes, we find four elements of the temporal bones existing, which occur in the tympanic cavity of the human ear; but they have shot out to a much greater extent, because they are to serve in fishes a new and very important use; they are here no longer confined by solid walls to a small cavity, but shoot out in their development, both for the purpose of progressive motion and to be used in respiration.

Behind the branchial arches you perceive the pharyngeal bones, like internal jaws, covered with teeth, and situate at the commencement of the œsophagus, below the back part of the cranium, in the lophius and the perch. The inferior of these bones are more moveable than those above, and they act with force and precision in bruising and masticating the food in the back part of the mouth. In the *lophius piscatorius* you observe, behind the two great arches formed by the lower jaw and the os hyoides, another very powerful arch, attached behind to the occipital bone, and passing down in an arched form on each side to meet in front.

The front portion of this arch, which is of great strength, appears to be formed in fishes, as in reptiles, by the junction of the two coracoid portions of the scapulæ. The scapulæ are generally small compared with these processes, which in the cold-blooded vertebrata form distinct bones, for the most part connected with the scapulæ only by suture. This scapular arch in fishes, as in amphibia, derives no support from the ribs, and forms a strong independent rib-like arch for the attachment of the arms, which, in fishes, are called pectoral fins.

The form of this arch is interesting. They look like ribs. Indeed all the arches of which I have spoken—the lower jaw itself—have in fishes the form of ribs; long, slender, curved bones that meet on the median line; they are all, in fact, analogous to ribs or transverse processes of the central vertebral column—the lower jaw, the os hyoides, the two coracoid bones. This last is an important arch in fishes, for it gives attachment to the anterior extremities, which are more developed in this class than the posterior.

These are the only extremities which are here attached to the vertebral column. They are the most perfectly developed extremities in almost all the species. So in this respect we see that the condition of the anterior extremities, where we have first distinctly come to them, corresponds by their relative degree of development to the earliest condition of those extremities in man, where they are the first developed—the largest in the embryo state of all the mammalia. Prolonged from this arch we find bones developed, which subdivide and radiate as they shoot outwards from the arch; these form the arms and the hands. The humerus is generally very small and immoveable, and even the radius and the ulna (52, 51) are very short in fishes.

In fishes the hand is the part of the arm that is most developed, and we find that it consists of an immense number of fingers radiating out from the bones of the carpus. We see this subdivision and radiation even in the human arm, from the single humerus to the five terminal phalanges. In fishes we can generally observe a humerus, a radius, and an ulna, before we come to the range of small bones, the bones of the carpus. The bones of the metacarpus and the phalanges are

remarkable for their number and their length. We observe this part indeed of fishes sometimes so much developed, that the animal by the stroke of its hand can spring from the water, and even sometimes fly through the atmosphere; that is the case with the flying-fish. The hand is so enormously developed in the rays (Q^a), that it changes the whole form of the body.

Q^a

The whole anterior half of the body of the rays is surrounded by the numerous radiating fingers (Q^a *g*) upon each side. The two thumbs or first radial fingers meet each other above the head, and the fingers continue closely to succeed each other and form a continuous hand extending downwards to the middle of the body. In fact, the circumference of the trunk is chiefly composed of fingers. This ray is a flat fish, without air-bag, that lies at the bottom of the sea. Its motion through the sea must depend chiefly upon the hand to raise it from the bottom on which it rests; thus we see it so enormously developed; and by these skeletons you perceive the number of long narrow phalanges entering into the formation of each finger, and the great number of fingers in the whole hand. The hand is of great size also in the shark, and in the higher cartilaginous fishes, and is constructed upon the same plan as that of the skate.

The posterior extremities of fishes, or their ventral fins (Q^a *i*, *i*), are not attached to the vertebral column, for the reasons I mentioned to you before, but are supported by two slender bones—the iliac bones. These iliac bones, from not being attached to the sides of the vertebral column, to any sacrum or transverse processes of vertebræ, may shift their places in the same manner that we have seen the inter-spinous bones may shift their places when they have once acquired a separate centre of development.

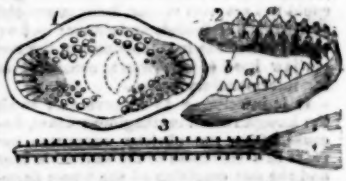
There is a tendency in all the parts of fishes that can shift their position, to advance forwards, to leave the posterior part of the body as free as possible for the lateral motions of the vertebral column. Nothing is therefore more common than to find in fishes the legs as far forwards as the arms; and in this large lophius you observe that the legs are even further forward than the arms. In the cod fish before you, you observe also that the legs are before the arms—thrown further forward upon the abdominal surface of the body.

These concave bones to which the feet are attached, shooting down like ribs and detached from the vertebral column, sometimes develop so much as to constitute a pelvis, where you can trace the three elements of the pelvis of the human body. In the ray you observe that they have united on the median plane; that they have shot up two parts analogous to the iliac bones, and send down a part analogous to the ischium, and the part that meets on the median plane, where they are anchylosed, resembling the pubic bones.

The intermediate bones of the legs between the pelvis and the phalanges of the toes are almost never developed. The legs of fishes consist, therefore, almost solely of the phalanges of the toes, and those that are proximal you may regard as the metatarsal bones.

All the parts of the skeleton of which I have spoken are susceptible of various modifications of form, to suit the different kinds of fishes for their living habits and functions. Frequently we find fishes to have the bones of the face lengthened outwards by the prolongation of the anterior part of the vertebral column to a great extent. In the *saw* fish (R^a 3), we observe that the upper jaw bones, the nasal bones, and the vomer, are lengthened outwards to form a powerful instrument, along the sides of which are placed the strong, sharp, and firmly-fixed teeth.

R^a.



These teeth are placed along the outer margins of the flattened maxillaries, because in the lateral motions of the fish they are thus best situate for the purposes of offence and defence. This saw, then,

which is prolonged from the anterior part of the head of this *pristis* (*R*° 3), is not an instrument which consists of elements belonging exclusively to the saw fish, and which is not to be traced in the human face, but consists of these ordinary bones of the human face lengthened out into this shape.

In the *sword* fish you observe nearly the same structure as in the saw fish; but here the bones of the upper jaw, destitute of teeth, are prolonged; the upper jaw bones, the vomer, the nasal bones, are prolonged, and form a piercing and cutting sword, sharp at the point and along the sides; an instrument which this *xiphias gladius* uses with such prodigious force as frequently to destroy the largest animals of the deep—assembling in numbers they are said to attack and destroy with this instrument the gigantic whales, and then to devour their flesh when they are exhausted.

The pedunculated eyes are common among the invertebrated animals. You have seen in the crab, the eyes extended laterally, and placed frequently at the ends of long peduncles. We see that structure frequently, though to a less extent in cartilaginous fishes, as in the rays; but this is a remarkable form which we see in the hammer-headed shark—the *zygæna*, which I hold in my hand; for here the orbits themselves have been prolonged outwards, the solid bones of the skull have shot out laterally on each side of the head to form a long fixed peduncle, at the extremity of which is placed the orbit containing the eye.

In the cartilaginous fishes, you will frequently observe that the anterior part of the face is prolonged outwards to a great extent, as we have seen in the saw fish, the sturgeon, and others; but you will never find that the lower jaw keeps pace with that great enlargement and prolongation of the upper part of the face. The softness of all the bones of the skeleton would render this structure impossible. A lengthened, soft, cartilaginous, lower jaw could not act with vigour, being composed of materials so flexible and elastic; and we observe that the moveable part of the upper jaw itself is very short, consisting of the intermaxillary bones.

It is interesting to observe this in all the known recent cartilaginous fishes, because, from the obvious connexion betwixt this shortness of the moveable jaws and the soft condition of the whole skeleton, it is extremely probable that the same laws have regulated the forms of the cartilaginous skeletons that have formerly existed.

A skeleton was lately found, and is preserved in the museum of Bristol, which has the upper and the lower jaws slender, and prolonged like those of the gavials—the crocodiles of the Ganges. It has been supposed, from examining its osteology, that this remarkable fossil belonged to a cartilaginous fish; but from the circumstance I have mentioned to you, it appears to me more than probable that no cartilaginous fish ever possessed a lower jaw of that length and slenderness; that that skeleton could not have belonged to a cartilaginous fish, which has the whole skeleton too soft to be preserved entire in the strata of the earth, but must have belonged to an animal which had the lower jaw composed, like the gavials and pterodactyli, of more solid bones.

From what I have mentioned of the different hard parts of fishes, as well as the skeleton—the external hard parts—you will observe that in a fossil state we might have many portions of these animals left us, which did not belong to any part of the internal skeleton, and which yet were indicative of the former existence of fishes. Nothing is more common than to find in a fossil state, small, detached, round, dark-brown or black, glistening or shining portions of solid matter, which have belonged to the jaws of fishes. Some of the detached fossilised portions belonging to the remnants of the external shells—the scales that we see so strong and solid on sturgeons and skates, and other cartilaginous fishes.

From the comparative density of the teeth of fishes, as those numerous rows of round, short, molar teeth, behind the sharp incisors of the common *sargus* (*R*° 1) or sea-bream, and the softness of their jaws and the whole skeleton, we frequently find that all parts of the vertebral column and of the skeleton have entirely disappeared, and that only the teeth have been left us quite isolated in a fossil state.

This is particularly the case with the cartilaginous fishes, and I have here numerous detached teeth of sharks which I picked up from the clay-beds on the shore of the Island of Sheppey. No trace of any other part of the soft skeletons of cartilaginous fishes can you find to which these teeth belonged, although there occur numerous portions of the skeletons of osseous fishes.

The soft and leathery consistence of these dried jaws of recent sharks (*R*° 2) shows you the reason of the total disappearance in the ancient strata of all parts of the skeleton of cartilaginous fishes, and thus their teeth are found so frequently detached. Nothing is more common than to find them embedded in chalk detached from any other solid parts; the tongue

like stones—the *glosso-petræ* of the older geologists.

The spinous processes and their elements in fishes frequently acquire a great development, as we have seen both in the region of the cranium, as you see in this remarkable head of the *ephippius gigantius*, and in the posterior part of the column, as we see in the large curved and serrated dorsal rays of the balistes that constitute the anterior dorsal fin. The anterior dorsal ray is here of enormous magnitude. Remains are found, with other parts of fishes, in the oldest fossiliferous limestone, which most closely resemble in form this ray of the *balistes*, though far exceeding in magnitude anything of this kind now known in existence. These parts of fishes are, as we might expect, the oldest remnants of any vertebrated animals found in the strata of the earth.

Thus then we see that the whole of this subdivided, elastic, internal, organised skeleton of fishes is beautifully adapted to the dense and liquid element in which those animals reside, and through which they are organised to move chiefly by the lateral motions of their vertebral column, like the tadpoles of amphibia and the aquatic sauria. The osteology of their head, and trunk, and extremities, is in the highest degree interesting, from the numerous analogies it presents with the earliest embryo condition of the human skeleton. It is interesting from its affording us a key to all the higher forms of the skeleton we have yet to come to in the amphibious animals, in the reptiles, and even in the hot-blooded classes of vertebrata. The elements of the skull of osseous fishes are the most numerous of all the red-blooded classes, and they are all kept permanently detached, so that you may here see these constituent primary elements on a magnified scale. They appear to present the most complex forms of the skeleton, because in all the higher animals that we have hereafter to examine, those elements we shall find more or less united and anchylosed; and the difficulty becomes greater and greater as we ascend to man to comprehend the real nature of those complex aggregates of numerous anchylosed bones. You must go to the earliest embryo condition of his skull and skeleton, and watch the first deposition of the first particles of earthy matter, in order to discover these osseous elements, or you must go to osseous fishes which permanently retain that embryo condition, and there you will find retained through the whole of life, and presented to your view upon a magnified scale, all that interesting primitive condition of human osteology.

LECTURES ON SURGERY,

BY

MR. WARDROP.

OF THE SANGUINEOUS SYSTEM.

ABSTRACTION OF BLOOD.

(Continued from Lecture, page 236-42.)

Indications for employing General Blood-letting.—Of the Pulse;—An incompressible Pulse;—Other Changes in the Pulse;—Natural Varieties of the Pulse.—Changes in the Heart's Action;—The Local Pain.—Importance of the first Bleeding;—Extent to which it should be carried.—Effects of Syncope.—Quantity of Blood to be abstracted.

Indications for the Employment of General Blood-letting.

Having endeavoured to point out the different modes by which blood may be abstracted *locally*, and having illustrated the salutary effects of local depletion by references to the phenomena of spontaneous hemorrhages, and various local inflammatory affections, as well as congestions of blood, which are not accompanied by any constitutional disturbance, I now come to consider the subject of general blood-letting, the indications which point out the propriety of employing it, and the quantity of blood which should be removed in the treatment of various diseases.

It was remarked in the last discourse, that whenever any local disease or injury has excited a febrile disturbance throughout the system, general bleeding or venesection ought then to be decidedly preferred to local bleeding, and the indications to which your attention ought more especially to be directed in deciding on the propriety of general blood-letting, are, the state of the heart and arteries, and the character of the local pain.

The leading symptom by which the constitutional disturbance demanding venesection is indicated, will be found in the *quality of the pulse*; and in deciding on the propriety of blood-letting, it is not always necessary that you should find the pulse frequent, or tense, or full, or hard, but you ought on all occasions to be satisfied of the propriety of abstracting blood from a vein, whenever, in any complaint of an inflammatory type, or under circumstances such as those which often arise after operations, or from accidents, there is the least deviation in the pulse

from the natural state. No sooner have a few ounces of blood been abstracted in cases of this kind, then the pulse will be observed to "rise," as it is called, and to acquire volume and power, thus indicating the propriety of the measure.

There is nothing more uncertain than trusting to those qualities of the pulse which are usually described as such which alone indicate the propriety of blood-letting, and you ought ever to be aware of the important fact, that, during an attack of inflammation, the pulse varies with the organ affected, and is even different in inflammatory affections of different textures of the same organ, except in one particular indication, which shall be presently pointed out.

The mere frequency of the pulse is a circumstance of little importance in estimating the propriety of blood-letting compared with changes in its qualities, and, therefore, the usual practice of counting with great accuracy the number of pulsations, is apt to lead to the formation of an erroneous judgment. In two patients, whose pulse beats 120 in a minute, the one may require to be plentifully bled, and the other to have cordials!

Little difficulty occurs in distinguishing those states of the system which require general bleeding when diseases have far advanced, or have made considerable progress, and when their symptoms and character have become distinctly developed.

It is before they arrive at this period, and when, too, medical treatment is most available, that their true nature is apt to escape detection, and there are many states of disease where substantial advantage is to be derived from venesection, and where, at the same time, it could not, perhaps, be affirmed, from the presence of any particular symptom, that inflammation did actually exist. "Inflammation in some textures of the body," observes an intelligent writer, "is so obscure in the beginning, so insidious in its progress, and so rapid in its termination, that in all cases in which the surgeon hesitates respecting the necessity of bleeding, it is a wise plan not to deprive the patient of the benefit of the doubt, but immediately to proceed to venesection."

It is also certain that there is a period of disease, when bleeding is not only unnecessary but improper; and there is a moment when venesection may be had recourse to with more advantage than at any other. To detect this precise period must, therefore, be of great practical importance. In those who have been wounded, or who have met with some severe accident, or on whom an operation has been performed,—in all such cases the action of the heart and arteries, which is at first diminished by the general shock received by the whole system, should be allowed to recover, or reaction should take place before resorting to blood-letting, and this rule applies generally to all inflammatory diseases. The chill, for instance, which a person receives from sudden exposure to a change of temperature, and which lays the foundation of an inflammation in some of the internal viscera, produces a collapse of the whole frame, which is not followed until after a certain period, by those inflammatory symptoms which require the blood-letting.

An Incompressible Pulse.—The peculiar feeling in the pulse to which I have alluded, and which you will find points out, almost universally, the propriety of venesection, has been called, and sufficiently well indicated, by the term "incompressibility." An incompressible state of the pulse may, I venture to say, be considered as pathognomic of inflammation, in whatever organ or texture that inflammation exist. I have already remarked, that the different textures of an organ when inflamed, are each attended with some peculiarity of the pulse. Inflammation of the dura mater,—of the cerebral pulp,—of the pleura,—of the mucous membrane of the bronchi,—of the pericardium,—of the muscular parietes of the heart,—of the serous membrane which lines its cavities,—of the peritoneal and of the mucous coats of the intestinal canal,—are each accompanied by peculiarities of pulse; but in all you will be able to detect an incompressibility. For whether the pulse be full or small, hard or soft, frequent or slow, if with the point of one finger the artery be pressed at the wrist, you will perceive with another finger applied to the artery beyond the first finger, that unless a very considerable degree of pressure be employed, the pulsation will not be entirely destroyed, but the sensation, as if of a fine thread, or hair, will remain.

The incompressible state of the pulse as indicative of the propriety of blood-letting, is illustrated in some of the subsequent cases; and you may also observe instances of persons being relieved from internal disease by profuse and spontaneous hemorrhage, and in whom no deviation in the pulse, from its natural state, could be detected, except as regards this feeling of incompressibility.

Attention to this quality of pulse has scarcely ever failed to guide me, in the use of phlebotomy, even in doubtful circumstances, and a conviction of the accuracy of the observation led me to adopt bleeding in many cases, where I could not

otherwise have ventured to employ it, and where there were not present any of the ordinary indications of inflammatory action. It was this state of pulse which first gave me confidence in employing venesection in erysipelas, in cases of sloughing ulcers, in exanthematous fevers, in cases of poisoned wounds, in specific diseases, and in certain stages of several other affections afterwards to be considered, and where an opposite practice is frequently nay usually followed.

In most of the diseases now alluded to, by a superficial examination of the pulse, an impression is generally received that there is a feeble state of the system, and hence, in place of a depletive or antiphlogistic mode of treatment, wine, bark, and stimulating remedies, have been employed. But you can be readily satisfied of the results of these two very opposite systems of treatment in some of those diseases, by observing the practice in the different hospitals of this city, where one set of patients, under the care of the surgeon, are bled profusely, and another set under another surgeon afflicted with similar ailments, get as much bark and wine as their stomachs can receive.

Though I have never found an incompressible state of the pulse, without venesection being an expedient measure, yet there are other sensations perceptible in the pulse which also indicate the propriety of blood-letting. A hard pulse,—a firm pulse,—a full pulse,—a wiry pulse,—an oppressed pulse, all, in their turn, either taken singly, or combined with other symptoms, more particularly local pain, hot skin, and white tongue, point out the propriety of employing venesection.

Natural Varieties of the Pulse.—No acquirement demands more attention and experience than such a knowledge of the pulse as to be able to distinguish its various peculiarities, both in health and disease. This knowledge entirely depends on the improvement of the sense of touch. Like that of sight and hearing, the sense of touch differs exceedingly in acuteness in different persons, but in all it is capable of improvement. You cannot expect at first to be able to distinguish these nicer shades of difference in pulses which are palpable to an experienced finger, any more than you could expect at once to perceive the slighter varieties in the shades of colour, so easily discernible by a skilful painter. All the senses require tuition. You ought to practise, and feel a number of different pulses, both of people in health, and of those afflicted with disease, one after another, and by first observing strong contrasts, you will ultimately become familiar with their lesser differences, all which essentially assist in pointing out particular states of the vascular system.

You will thus learn that there is a great variety in the pulse of different persons in health, in the number of beats at the different periods of life, and at different hours of the day, and that there is frequently a difference in the pulse of the arms of the same person, and, moreover, that the pulsations of the heart and arteries do not always correspond. The pulse, too, is usually found more frequent in women than in men, and in the morning is slower than in the latter part of the day, its quickness being increased by the various bodily and mental stimuli to which the person may have been exposed. To all these differences your attention ought to be directed as points of great practical utility, and some men of observation acquire more than others the tact of acutely discriminating these varieties in the pulse, and of perceiving its varied changes, whether arising from disease, or from accidental temporary causes.

Magendie has given a scale of the pulse, by which you will perceive that the difference in frequency between that of the infant and the aged, is more than double,—the quickness of the pulse gradually diminishing with our years.*

Changes in the Action of the Heart.—Besides the presence of fever, local pain, and the state of the pulse, the changes of the heart's action are an important indication in the use of bleeding, and one on which sufficient attention has not been generally bestowed.

The pulsations of the arteries and those of the heart will be often found not to correspond. I do not mean as to the number of pulsations, but as to their strength and other qualities; and I may venture to assert, that generally in those cases where the pulse at the wrist is contracted and difficult to compress, the heart will be found to beat with an increased degree of vigour. Hence this vigorous action of the heart may be regarded as a useful guide in the employment of blood-letting, and when taken into account with the incompressible state of the pulse, will afford additional confidence to the surgeon in deciding on a deplesive system of treating the disease.

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* *Scale of the Pulse.*

At birth.....	130 to 140 in a Minute.
One year	120 — 130
Two years	102 — 110
Three years.....	99 — 100
Seven years	85 — 90
Fourteen years	80 — 85
Adult age.....	75 — 80
First old age	65 — 75
Confirmed old age..	60 — 65

A knowledge of the heart's action can only be acquired, like that of the pulse, by an accurate examination of it in a number of individuals in health, as well as under the influence of disease; and you ought to make yourselves as familiar in examining the actions of the heart, as it is usual to be with the pulse.

Case.—A young lady, who had all the symptoms of cerebral inflammation, for which leeches had been applied to the head, still complained of pain, with great depression, hot skin, and other symptoms of fever. Her pulse was small and incompressible though not frequent, and on examining the heart, to which I called the attention of the surgeon, he was surprised to find its action very tumultuous. Venesection was now employed, and whilst the blood flowed the pulse became more voluminous, and the heart's action was subdued. Syncope ensued after a few ounces of blood were taken, and the patient recovered without any further depletion.

Case.—A lady, in a state of pregnancy, had been greatly debilitated, having vomited every kind of food and drink which she had taken for upwards of twenty days. I saw her at this period. She was emaciated and so feeble that her recovery was, by those around her, considered hopeless. She had a distinct tenderness in the epigastrium on pressure, and her pulse, which gave at first the impression of great langnor, on more minute examination was very contracted, feeling like a thread, and incompressible, whilst the heart's action was vigorous.

This state of the vascular system gave me confidence that I should afford her relief by blood-letting, which was immediately resorted to, though with hesitation by the other medical attendants. No sooner had a few ounces of blood flowed from the vein than the pulse began to rise and acquire volume, and upwards of twenty ounces were abstracted before its vigour was subdued. The effect of this treatment was this,—that along with very small doses of the sulphate of magnesia, repeated at short intervals, the stomach no longer rejected food,—the alimentary canal was unloaded,—the patient's recovery was progressive and permanent, and she was delivered of a healthy child at the proper period.

The Local Pain.—In almost every case where venesection is necessary, there is present along with the changed action of the arterial system, local pain, more or less severe. The degree of pain, whatever organ the inflammation may affect, is no measure of the violence of the accompanying inflammation. On the contrary, persons often suffer severe agony when there is but slight inflammatory action; whereas, when the inflammation has arrived at its acme, the local pain often becomes dull and obtuse, and diminishes in intensity.

Whilst it is always expedient to have recourse to blood-letting when there is a fixed and unceasing pain, increased by pressure, and accompanied by an alteration in the pulse and in the action of the heart, it is of great importance to be aware, that though the local pain is usually alleviated, as well as the action of the vascular system subdued, by venesection, yet general bleeding must not be continued, or repeated as long as the local pain is unabated. On the contrary, when all febrile excitement has been subdued by the bleeding, the remaining pain may be alleviated by opiates, either taken singly, or combined with calomel or antimony; or local bleeding with leeches may be necessary; or it may yield to the effect of a blister. Where local bleeding is employed, the degree of pain is the chief indication, both for adopting it, and for regulating its extent and repetition; and in inflammatory cases, accompanied with general febrile disturbance, the changes produced in the local pain are, along with those in the pulse, as has been already mentioned, an almost unerring guide for regulating the extent to which the bleeding ought to be pursued.

Importance of the First Bleeding.—There is no maxim of the practical importance of which I am more fully convinced than that the loss of a given quantity of blood at the first bleeding, is of greater utility in stopping the progress of disease, where general bleeding is required, than the loss even of a much larger quantity of blood by several successive bleedings.

I wish to be understood to say, that in place of taking a quantity of blood, say sixty ounces, at three successive bleedings of twenty ounces each, performed within thirty-six hours, an infinitely greater degree of relief will be derived from taking two-thirds of that quantity at one bleeding. Not only will the progress of the disease be thus more quickly and decidedly checked, but the patient will be saved the loss of twenty ounces of blood. This observation I have already made when speaking of the employment of venesection after operations where inflammation supervenes.

The good effect of abstracting so large a quantity of blood at the first bleeding might have been expected, without adopting any preconceived opinion or theory on

the subject; for as we have been taught by experience, that the great benefit of abstracting blood is derived from the sudden change which such depletion produces on the action of the heart and arteries, it is evident that the change must be effected in a more decided manner by abstracting a quantity of blood suddenly, and at one bleeding, than by taking away an equal quantity slowly, and at one or less distant intervals.

In almost all cases where bleeding is employed, there is a disposition on the part both of the patient and the by-standers, and often too of the medical attendant, to be as sparing as possible in the evacuation of blood, whereas in the generality of cases an effort, I am convinced, should be made rather to take away as much as the patient can bear, and the surgeon should not desist until there be rational grounds to expect that a second bleeding will not be necessary.

A good general rule, in judging of the quantity of blood to be taken, will be found in the change produced in the action of the heart and arteries. The effect, however, of abstracting blood in relieving local pain, whilst the blood is flowing from a vein, is not to be entirely disregarded, though the only unerring criterion, as far as I have been ever able to discriminate, is that of the change produced in the *pulse*. That change in the pulse which marks the propriety of carrying bleeding no further, is the absence of the "incompressibility" which has been already mentioned. This state of the pulse, however, does not usually subside, until fainting or syncope supervene, in which case the pulse ought to be carefully watched after the fainting goes off, when it will be sometimes found that the sensation of incompressibility soon returns. If this take place, more blood ought immediately to be drawn, and its abstraction persisted in, until the peculiar feeling of incompressibility is entirely subdued.

Case.—A young athletic officer complained of an intense pain in the head, accompanied with such depression that he could with difficulty move out of bed. His pulse was not much altered from the natural state, but there was a degree of incompressibility in it which pointed out the propriety of venesection. Upwards of forty ounces of blood were abstracted before syncope came on. I visited him two hours afterwards, when he had recovered from the state of fainting, and found a degree of incompressibility of the pulse still existing. I reapplied the bandage on the arm, and upwards of twenty ounces more blood were abstracted before the fainting state returned. These bleedings were followed by a complete relief of the pain in the head, and along with the free use of purgatives, calomel, and antimony, he permanently recovered.

When a large quantity of blood is not taken away at the first bleeding, or at a second quickly succeeding it, I have generally found that on all future occasions it is seldom practicable to abstract any considerable quantity, however much it might appear necessary; and thus it is, that when copious bleedings are not employed at the commencement of the treatment of inflammatory diseases, if the patient afterwards recover, it has generally been by resorting to a great number of small bleedings.

Case.—A young lady, at the commencement of an attack of peritonitis, had been three times bled in small quantities, and local as well as general bleedings were repeated whenever pain and febrile symptoms recurred; these were carried on each occasion as far as the pulse could bear, and always with relief. Yet she was bled, locally and generally, no less than seventeen times, before the progress of the disease was altogether arrested. I have long been of opinion, that it is only cases where bleeding has been too sparingly used at first wherein it is ever necessary to carry it to a great extent, and moreover it is only in such cases where you will see the pernicious effects of bleeding are exemplified.

It may also be mentioned that the decided and remarkable advantages to be obtained from the first bleeding, are strikingly illustrated by the practice of many intelligent veterinarians, and I have myself had frequent opportunities of observing the treatment of the inflammatory diseases of animals, whence I obtained, at an early period of life, grounds for much confidence in applying the same rules of practice in the treatment of the diseases of the human body.

Effects of Syncope.—You will find it laid down as a common rule in the treatment of many inflammatory diseases, that blood should be abstracted until syncope is produced; by which you would be led to suppose that the fainting was either a certain token of the quantity of blood that should be taken away, or that it was the act of syncope itself, and not the loss of the blood, which was to cure the disease.

Hence we often hear of persons being bled till they have fainted, as a proof of the activity of the practice which had been employed, without considering whether the fainting had been produced by exces-

sive depletion, or from the particular position of the patient whilst the operation was performed. Suppose two individuals similarly affected, and in every respect in the same state, one of whom is bled in the erect posture until he faints, while the other faints from the loss of blood whilst he is recumbent. In the first patient the syncope will probably be produced by losing one-half of the quantity necessary to be lost before the second patient falls into a state of syncope.

In having recourse to venesection it is, therefore, important to consider whether the purpose of the operation be to abstract a certain quantity of blood from the system, or merely to produce syncope. When it is desirable to make a person faint with the loss of as little blood as possible, as, for instance, in a case where we wish to reduce a strangulated hernia, or a dislocated bone, then the venesection ought to be performed in the sitting posture. But for the treatment of diseases requiring depletion, or the abstraction of a certain quantity of the sanguineous fluid, fainting ought not to be considered as an index of the quantity of blood to be withdrawn, but the usual means should be taken to avert its occurrence, except when the patient is in a recumbent posture at the time the venesection is performed. Indeed you ought to be particularly cautioned against placing too much confidence when employing blood-letting for the cure of inflammatory diseases, in conceiving that if you have bled the patient *ad deliquium*, you have carried the bleeding to its full and necessary extent. On the contrary, when, in any case, syncope has followed the abstraction of an unusually small quantity of blood, while the patient was in a recumbent position, then you ought, in the space of one or two hours, again to examine the patient, when probably you will find that the action of the vascular system has renewed its vigour, and that the inflammatory symptoms continue, so that if blood be again allowed to flow from the vein, a very copious bleeding will sometimes be found requisite to reduce the pulse.

This "premature" state of syncope, as it may be designated, not only arises from the patient's being bled in the erect posture, but is sometimes the effect of a moral influence, and, therefore, when, under such circumstances, the fainting state goes off, the inflammatory symptoms soon reappear.

Case.—A gentleman was seized with severe pains in the bowels, accompanied by a good deal of tenderness on slight pressure, along with some degree of febrile excitement. On opening a vein in the arm, only a few ounces of blood were removed, when the pulse sunk and he fainted. I visited him about two hours afterwards, when, having recovered from the state of fainting and not having experienced any relief, I again applied the bandage on his arm. Blood flowed freely from the wounded vein, and he did not fall again into a state of syncope, until he had lost about thirty ounces of blood; and this, along with purgatives, was followed with permanent relief.

Quantity of Blood to be Abstracted.—It is very usual, particularly in this metropolis, for medical men to give *to others*, instructions to take a certain quantity of blood from a patient, with the same degree of confidence as they would prescribe a dose of some drug. Nothing can be more absurd in principle, and more injurious to the sick, than such a custom. The only indication to direct you in measuring the quantity of blood which ought to be abstracted in individual cases, is the change produced on the pulse, and in the local pain experienced during the operation. You ought never, therefore, to hazard any preconceived opinion of the quantity of blood which it may be necessary to remove, but always to watch the effects of the evacuation whilst it is proceeding.

It often happens, that a pulse in which little deviation from the natural state could be detected, and which, considered singly, would not particularly indicate the necessity of bleeding, begins to rise, and to acquire force after a certain quantity of blood has come away, its force not being subdued until a large quantity, and a quantity much greater than could have possibly been anticipated as necessary, is removed. On the other hand, you will frequently meet with examples where the very reverse happens, and where a person, apparently of a full habit, with a strong elastic pulse, becomes quite depressed after losing but a very small quantity of blood. It is, indeed, with bleeding as with purging. Some persons never appear to be lowered even by the most active purge, whilst others are perfectly depressed, and the whole system is apparently deranged, by the operation of a brisk purgative.

If the observations which I have now made be correct, surely no one should pretend to predict or to specify the precise quantity of blood which any patient requires to lose. How little, therefore, must that practitioner consider the well-being of the sick, who, instead of per-

forming the operation himself, ventures to prescribe the loss of any particular quantity of blood! Such conduct is highly derogatory to the character of the profession, and calls for the severest animadversion. At the same time, the practice is limited, I believe, to the metropolis. If it be true, as reported, that certain eminent practitioners have allowed their patients to remain several hours in a fit of apoplexy, or in a state of great suffering, rather than themselves perform the operation of venesection, it is only surprising that the legislature has not interfered, and indicted as criminals the culpable parties,—just as the law punishes those whose want of professional skill is the cause of injury to persons who are placed under their care.

In forming an opinion of the probable extent to which bleeding should be carried in different instances, you ought to be aware that, in general, fat people can with impunity lose much less blood than lean persons, and large and robust individuals do not require the same extent of depletion in inflammatory diseases, as those who are thin and appear to be more delicate. So it is with respect to age, the young and plethoric often bearing much less bleeding than the old and thin.

To prevent, therefore, being guided by any preconceived notions on this point, I am always in the habit of letting the blood flow into a large basin, which permits also the most convenient mode of supporting the arm, and allowing no other circumstances to influence me in estimating the quantity to be removed, than the abatement of the local pain, and the changes in the action of the heart and pulse, to which I have already alluded. And with these, I may almost venture to say, *unerring* guides, and after many observations on numerous examples of apparently similar diseases, it is extraordinary to notice the difference in the quantity of blood which it is necessary to remove for the cure of the same disease in different cases.

There are still several important points connected with blood-letting, which have not yet been discussed, and which will afford ample materials for a future discourse.

I SEE they say in THE LANCET, or some other journal, that Dupuytren is ill, and that he has had paralysis of one half of the face. Now, I never knew a case of this kind in which the patient did not ultimately recover. It does not arise from injury of the cerebrum, but from an affection of the portio dura.—*Mr. Brodie at St. George's.*

CLINICAL LECTURE

ON CASES OF

VENEREAL DISEASE.

Delivered at Jervis-Street Hospital, Dublin, 1833.

BY WILLIAM WALLACE, M.D, M.R.I.A., &c. &c.

GENTLEMEN,—I propose to consider in the present lecture, two highly important practical questions respecting the venereal disease.

1st. Has the nitrate of silver the power of arresting the progress of the primary syphilitic ulcer?

2ndly. Has mercury the power of dispersing the primary syphilitic bubo?

Now what is the fair way of investigating these questions? Surely by an appeal to practice; for, however plausible upon general principles any mode of treatment may seem to be, we cannot establish its utility or propriety, except by an appeal to the results of its application. Let us, therefore, take, indiscriminately, a certain number of cases in which this practice has been employed under your inspection, and consider the results.

You are all aware of the great varieties which the primary syphilitic ulcer and bubo exhibit in different persons: indeed, you cannot attend to the venereal cases for one week without making this observation. You are also aware that I am accustomed to call one particular form of sore, and one particular form of bubo, the regular form of primary syphilis, and of the primary syphilitic bubo. My reasons for this are so fully detailed in the first volume of my Treatise on the Venereal Diseases, that it is unnecessary in this place to enlarge on them; and I now allude to the classification there adopted, merely for the purpose of begging of you to bear in mind, that it is the treatment of the regular form of these symptoms of the venereal disease which I propose first to discuss. It would occupy too much of our time, on the present occasion, to enter on an examination of the appearances or history of the regular form of the primary syphilitic ulcer or bubo. Nor, indeed, is this necessary, as I have elsewhere so fully described these symptoms. I may, however, ask you to glance at these drawings, which, in a very striking and natural manner, present to the eye the contrast between the regular, and what I have named the "degenerate" forms of the primary syphilitic ulcer and bubo. (Here

Dr. WALLACE exhibited to the class some beautiful representations of the stages of the "regular form of primary syphilis, of the regular form of bubo, and of the degenerate forms," both of the primary syphilitic ulcer, and the primary syphilitic bubo.)

I shall now proceed to consider, in the order in which they have occurred, the reports of the cases which lie before me. At the conclusion of each case I shall make such remarks as the case may sanction or require, and having considered in this detailed manner as many cases as may be necessary to give a full and accurate view of the subject, I shall make such general observations as a tabular view of all the cases which have occurred to us in the course of the last two months, and of which we have correct and full reports, shall warrant.

CASE 1.—*Primary Syphilis at the Frænum, with Bubo in the Right Groin.*—Andrew Leg, aged 21.

1st day. Has an ulcer the size of a small pea, of a whitish colour, surrounded by a diffuse areola, placed in the fossa, at the right side of the frænum, which fold it has nearly perforated. Has also a tumour in the corresponding groin, formed by an enlargement of two lymphatic glands, one close to the other, each moveable, and about the size of a large filbert.

A pointed piece of the nitrate of silver was carefully rubbed about four times over every part of the surface of the ulcer, or, until its margin was rendered black, and the ulcerated surface of a deep ash colour. A small particle of lint was then placed on the ulcer to absorb any dissolved caustic which lay in the bottom of the sore, and the patient was directed to remain as quiet as possible, and to take, every three hours, two of the compound calomel pills, which I am in the habit of prescribing, each of which contains one grain of calomel, one-eighth of a grain of opium, and one sixteenth of a grain of tartarised antimony.

2nd day. The tumour seems fuller, but softer; the ulcer cannot be distinctly observed, in consequence of being covered by accumulated discharge, and by the slough caused by the nitrate of silver. Says he took twelve pills, but admits he did not remain quiet. Pills repeated.

3rd day. The tumour in the groin seems less in size. The superficial extent of the ulcer appears increased, but it is covered by lymph, where the slough has separated. Its margin is in several parts red, and in those parts the diffused areola is wanting. Pills repeated.

4th day. The ulcer is covered in a full and perfect manner by whitish lymph, and surrounded by the healing margin. The tumour in the groin is much diminished. Took twelve pills yesterday. Says he feels as if there were lumps in his throat, but there is no mercurial fetor of his breath. Pills repeated.

5th day. All uneasiness has ceased in the tumour, which is further diminished in size. The ulcer is much contracted since yesterday. No mercurial affection of the mouth, and he complains less of his throat. Pills repeated.

6th day. The ulcer further contracted. The tumour less. Has taken six pills since yesterday. Mouth unaffected. Pills repeated.

10th day. The surface of the sore being yesterday very white, owing to a covering of a thick stratum of lymph, was stimulated with the weak solution of the nitrate of silver (five grains to an ounce of water), and it appears to day of a pale red. The tumours are nearly gone. Mouth slightly sore. Pills repeated.

16th day. I do not find that any note was made from the 10th to the 16th day; when it is reported that the sore is quite healed, that no remains of the bubo exist, that he has taken in all ninety-six pills, and that his gums and breath are very slightly affected.

Remarks.—Gentlemen, this case afforded a good example of the regular form of primary syphilis in the fossæ of the frænum. The whitish colour of the surface of the sore, and the surrounding diffuse areola, demonstrate that it was, when the patient applied, in the stage of ulceration. It appears, from the report, that the process of reparation commenced on the 3rd day, and that it was perfectly cicatrised on the 16th. Now let me ask such of you as may have seen a similar ulcer in the same situation, treated on any other plan, whether you have ever observed results so favourable. Would you not, from what you have seen, and from what you have read in books, been led to expect the inevitable perforation and destruction of the frænum, and the consequent formation of an ulcer, which would have required, at least, twice sixteen days to heal; or perhaps would have become so irritable, or so inflamed, as to produce phymosis, and a state of the penis which might not have been remedied for four times the period occupied by the treatment here adopted?

With respect to the bubo, which was in the first stage – that is, neither the surrounding cellular tissue nor the superincumbent skin had become affected,—you have to remember, in the first place, that its state was not aggravated by the appli-

cation of the caustic to the surface of the ulcer; and in the second place, that the administration of mercury caused its rapid resolution, although this remedy did not act on the patient so severely as to cause any inconvenience.

CASE 2.—*Primary Syphilis on the Common Skin of the Penis, with Bubo in the Left Groin.*—Miles Egan, aged 29.

1st day. Has an ulcer the size of a sixpence seated on the superior surface of the body of the penis, covered by a soft brownish-yellow scab, and surrounded by a diffuse mahogany-red areola; the base of the ulcer is tumid, and feels a little hard when grasped between the finger and thumb. Has a tumour in the left groin larger than a pigeon's egg, somewhat fixed, and adherent to the skin covering it, and to the surrounding cellular tissue. The integuments over the bubo are faintly red. It is very painful. Says he has had the sore ten days, and the bubo five days. He was directed to poultice the ulcer, and to take two of the compound calomel pills every two hours.

2nd day. Has taken twelve pills since yesterday morning. They have caused some sickness, griping, and purging. The tumour is diminished in size and less painful, and the crust has been removed from the ulcer, which appears to be, as above stated, about the size of a silver sixpence. It is evidently granulating in its centre, yet the ulcerative process is still extending at its circumference. He admits that he did not remain in bed yesterday as directed. The nitrate of silver was applied as an escharotic to the circumference of the ulcer, and as a stimulant to the centre. The compound calomel pills were repeated.

3rd day. The redness of the integuments covering the bubo seems to be increased. It is also more painful. He has not been living with regularity. The ulcer is covered by the slough formed by the nitrate of silver. A dose of the sulphate of soda was directed, and the pills omitted.

4th day. The pain and redness of bubo have decreased. The ulcer has contracted in size, and it is cicatrising. He says he confined himself to bed yesterday. Mouth slightly sore. Pills continued.

5th day. The bubo is much smaller, and almost all pain in it has ceased. The integuments covering it have acquired a natural colour. The ulcer is much contracted in dimensions, and a new cuticle is rapidly forming at its circumference. Has taken eight pills since yesterday, which have caused much griping. His mouth continues slightly sore. The ulcer was now washed with a weak solution of the nitrate of silver, and the compound calomel pills were continued.

6th day. Bubo not half as large as yesterday, and entirely free from pain. The sore is healing with great rapidity. His mouth is decidedly affected, and he has suffered considerably from the influence of the pills on his bowels and stomach. The pills were now omitted, and the following draught ordered:—

℞ *Tr. Opii* gts. xxv;
Tr. Lavend. Comp. ʒij;
Syr. Cort. Aurant. ʒi;
Aquæ Menthæ ʒi. M.

7th day. The ulcer and bubo are much the same as yesterday. The bowels have recovered. Mouth sore. The ulcer was washed with the weak solution of the nitrate of silver.

9th day. Bubo nearly gone. Having allowed the adhesive plaster to fall and remain off the ulcer, it has become encrusted, and hence its surface cannot be observed. His mouth is not so much affected. It was directed that the pills be renewed, and adhesive plaster was applied over the encrusted ulcer.

12th day. The tumour in his groin is quite away, but the sore seems to be extending. Its edge has become sharp, its margin perpendicular. It is again surrounded by a diffuse inflammatory areola. He admits that he has been irregular in his mode of living since the last report. Poultice to the sore, and a dose of the sulphate of soda, were directed, in conjunction with rest and temperance.

14th day. No return of tumour in the groin. Ulcer has contracted much, and is now surrounded by an irregular, red, healing margin; mouth still tender; pills repeated.

16th day. The sore, which is still further decreased, is now surrounded by a narrow very red margin. Mouth slightly tender. The pills to be continued.

19th day. The sore almost quite healed. Pills repeated.

This patient did not return after the report of the 19th day, but as I felt anxious respecting the result of the case, I sent to inquire after him on the 24th day, and it was reported to me that the sore was quite healed, but that the cicatrix was livid and tumid. The bubo has not returned. His mouth was not then perceptibly affected.

Remarks.—The case which I have just read is, Gentlemen, if its history be examined, full of interest. Let us consider some of its more remarkable features. First, you find that it affords an example of the power of mercury to disperse in eleven days a bubo, even after it has entered on what I call its third stage. You

know that when the gland and its immediately investing tunic are alone affected, the bubo is in its first stage; that when the cellular tissue is engaged, it has entered on the second stage, and when the skin, as well as the surrounding cellular tissue, has become affected, as was the case in the present instance, the third stage has begun. Secondly, remark that, on the 12th day, the sore exhibited a disposition to extend. This occurrence is particularly deserving your attention. Consider, in the first place, what was probably the cause of this change; in the second place, what modification of treatment was in consequence adopted; and lastly, what was the result; as well as what would most probably have been the result if the treatment had not been modified.

Now, as to the first question, there exists in my mind no doubt that the aggravation of the symptoms resulted from irregularities on the part of the patient in his mode of living, &c. &c.; and in respect to the second, you must have observed that the specific treatment was interrupted, and that such means as could be conveniently employed to subdue inflammation or irritation were used, and that these were quickly followed by the restoration of such a degree of tranquillity as allowed the specific treatment to be resumed. Whereas if this short interruption to specific treatment had not been adopted, I can assure you that a greater or lesser extension of the ulcer, with more or less alarming characters, would most probably have been the consequence. Here, then, you have an illustration of the remark I have made in another place, that it is an occurrence of every day to observe cases of primary syphilis, the inflammation and other morbid actions of which could have been easily subdued by a purge, a poultice, and a day or two of rest, and thus prepared for a simple course of treatment, so irritated by inappropriate applications, that the inflammation, &c., soon become greatly increased, and consequences ensue which lead to other consequences, the termination of which we cannot foresee. Thirdly, remark that the ulcer in this case exhibited a character which is rather common when the primary syphilitic sore is seated on the integuments, I mean that of ulceration persisting at the circumference, while granulation is advancing at the centre; and remark that the mode in which the caustic was applied to these different parts was not the same. It was applied as an escharotic to the circumference, and as a stimulant or alterant to the centre. I shall, at another time, have occasion to point out to you the importance of these distinctions. Fourthly, it has been noted that on the third day, that is on the day after that on which the caustic had been applied to the ulcer, there seemed an aggravation of the bubo. Now many will suppose (and I admit that it is possible) that this aggravation was owing to the application of the caustic. You will remark, however, that the caustic was applied as a stimulant to the centre of the ulcer, and although I have never seen the glands in the groin excited by this application, when used as an escharotic, I believe I have seen them temporarily irritated by its application as a stimulant. But while I make this admission, I must at the same time observe, that in my opinion, the aggravation of the bubo was owing, in this particular case, to inattention on the part of the patient, rather than to the caustic. The principal points, however, for you to remember are, that as soon as it was observed that the gland in the groin was becoming more inflamed, the specific treatment was dropped, and means employed to restore the symptoms to tranquillity, and that this change acted so quickly, that on the following day the specific treatment was resumed.

CASE 3.—*Ulcer of the Glans, and of the inner surface of the Prepuce, with Bubo of the Right Groin.*

Henry Fitzimmons, aged 18, in the habit of drinking. Has a natural paraphymosis. The penis is so much swelled, and the prepuce so enlarged, by œdema, that the organ is altogether greatly increased in size, yet it does not appear inflamed. Two ulcers are observed, one on the glans, and the other on the prepuce. They are seated at the region of the frænum, and are applied to each other in such a manner, as to lead to the supposition that they may have commenced by one ulceration at the side of the frænum, which, having destroyed this fold, produced the existing ulcers. The ulcer on the glans is as large as a large pea; it is surrounded by a diffuse areola, and covered by a white slough; the ulcer on the prepuce is covered by white lymph; there is a bubo in the right groin, entering on the second stage. Two days ago, Mr. Murphy applied the nitrate of silver to the sore of the prepuce, so as to cause a slough, and directed the compound calomel pills. Of them the patient has taken twelve.

The nitrate of silver was now applied as an escharotic to the glans penis, and the compound calomel pills were repeated.

4th day. Groin better; ulcer on glans has thrown off its slough; has taken twelve pills; slight soreness of mouth. Pills repeated.

5th day. Tumour in groin much less;

the sore on the glans has lost its areola, and is now surrounded by a narrow red margin; mouth sore. The pills omitted.

7th day. Mouth very sore; tumefaction of prepuce gone; sores very much contracted, and present, in a striking manner, the red healing margin, and the surface covered by lymph; the lump in the groin is nearly well. A dose of the sulphate of soda was directed.

9th day. Sores are very much contracted; no remains of the tumour in the groin; mouth still very sore.

11th day. Sores almost healed; mouth still sore. To have a dose of the sulphate of soda.

12th day. Mouth still sore, or, perhaps, sorer than it was; his bowels have been freed; the sore on prepuce is healed, and that on glans almost quite closed; the last is covered by a minute crust. He was directed a solution of the sulphate of alumen, for a gargle, and a dose of the sulphate of soda.

14th day. Mouth getting much better, scab on the sore on glans very minute.

16th day. The ulcer on glans quite healed; mouth still tender. After this day he did not return. He took, in all, thirty-six pills.

Remarks.—You remark, Gentlemen, that in this case the nitrate of silver was perfectly successful in arresting the progress of the ulcers, although the penis was very much swelled, and the prepuce very œdematous. You also remark, that the calomel dispersed the bubo, although it may be presumed, from the account which the patient gave of his own habits, that his system was not in the best state for the administration of mercury. It is worthy of observation, that a comparatively small quantity of calomel acted on this patient's system, and that the effects of this medicine on his mouth did not arrive at their greatest height until some days after it was omitted. This fact points out to you the propriety of watching the action of calomel most narrowly, and of not using it beyond what is absolutely necessary. Whenever mercury produces, on the complaint for which you are administering it, the end you wish, you should either omit altogether its use for a time, or else diminish its quantity. If you follow this plan, you will seldom, if ever, have occasion to manage a troublesome sore mouth; for I have observed, that in almost all those cases in which mercury acts rapidly on the mouth, it acts with equal rapidity in relieving the symptoms for which it is administered, provided it be administered in an appropriate case; and you will find, that the improvement of the symptoms, or the sufficiency of the action of the medicine used, will oftentimes lead you to diminish the dose of mercury which you are employing, before you are prompted to do so by the state of the mouth. This observation may be extended even to those cases in which the medicine acts most rapidly on the mouth—for in such it acts with equal rapidity on the complaint.

You had a remarkably fine opportunity, in this case, of comparing an ulcer covered with white slough, and one covered with white lymph; for the ulcer on the glans was in the former state, while that on the prepuce was in the latter. The diagnosis of these two states is of infinite importance in the treatment of primary syphilis, as must be admitted when it is considered that a sore covered with white slough is in the state of destruction, while that covered with lymph is in the stage of reparation. You may conceive that to distinguish these states is an easy task; and so it is, like most other tasks, when you know the way; but I never yet saw a student who could, until he was first informed of the mode, distinguish the one from the other; and, I fear, I might extend this remark to many practitioners; yet without this knowledge, I hold that it is impossible to treat the ulcers as they should be treated, for the treatment suited to the one state is totally different from that which the other requires. I have just said that the diagnosis is most easy when you know the rule, and I will add, that the rule which I shall give you is most unerring. Whenever there exists a slough on the surface of the primary syphilitic sore, it is surrounded by a diffuse areola, or, in other words, by a greater or lesser degree of redness of the surface, which dies away *gradually* into the surrounding parts. Whereas, when the surface of the primary syphilitic sore is covered by lymph, its circumference is surrounded by a *narrow, defined, abrupt*, red *margin*, and there does not exist any diffuse areola. This law is so regular and undeviating, that if a portion of a sore be in the state of slough, and another portion in the state of reparation, there is always a diffuse redness corresponding with the former, and a narrow red margin with the latter. You will please to bear this simple rule in recollection; I shall often have occasion to allude to it; and it will, as you shall find hereafter, enable you to understand several circumstances of much importance respecting the process of ulceration; but on this subject I shall not at present enlarge, as it will soon occupy our particular attention.

CASE 4.—*Primary Syphilis of the Corona Glandis, with Bubo in the Right Groin.*

James Byrne, aged 18, the subject of psorapthalmy, and of a chronic porriginous disease of his eyebrows and beard, has a natural paraphymosis.

1st day. A deep ulcer, the concavity of which is sufficient to receive the end of the little-finger, is seated at the left side of the corona glandis, covered or lined by a thick white slough, and surrounded by a diffuse areola. A bubo in its first stage exists in the right groin; has had the sore six weeks, and the bubo four days. The sore is very painful.

The nitrate of silver was so applied as to cause the margin of the areola to become black, and the surface of the sore of a deep ash colour. The compound calomel pill was also ordered.

3rd day. Has taken eight pills, which caused pain in his bowels, and prevented him from coming to the hospital yesterday. All pain in the sore has ceased; the slough caused by the caustic has nearly separated, and the part of the sore from which it has separated is covered with lymph, and bounded by a narrow red margin; the bubo is diminished; his bowels are now perfectly quiet. To have one of the compound calomel pills three times a day.

5th day. The tumour in the groin has disappeared. The ulcer is now very superficial, and the entire of its surface is covered with lymph, and surrounded by a narrow red margin. His mouth is sore. The pills to be omitted.

7th day. The mouth still sore; ulcer greatly diminished in size. Sulphate of soda to be taken.

9th day. Mouth still sore; ulcer almost quite healed; but the cicatrix is formed on a tumid base.

30th day. This patient has not attended at the hospital since the last report, owing, as he says, to his conceiving that he was well. He has now a bubo in the right groin, entering on the second stage. There is also some incrustation at the corona glandis, and upon this being removed, the surface appears slightly excoriated, and the tissues underneath full and hardish. He affirms that the present symptoms could not have been produced by a fresh infection, and he says that he took in all only eleven pills, having omitted them on the fourth day, in consequence of his mouth having become sore. To have two of the compound calomel pills three times a day.

33rd day. The pills have produced some pain in his bowels. The tumour in the groin is much smaller. The pills to be repeated.

37th day. Has taken twelve pills since last report, and in all twenty since the 30th day. The tumour is now confined to the gland, and is not larger than a small hazel nut. The excoriation and hardness at the corona glandis are much less obvious. His mouth, he says, is very sore, and I find his breath has a very strong mercurial fetor. Pills omitted.

39th day. Has not taken any medicine since last report. The bubo and excoriation have entirely disappeared. His mouth still slightly tender.

Remarks.—This case is interesting in several particulars. The ulcer was so extensive, and the slough on its surface so thick, that it was as nearly allied to the phagedenic forms of primary syphilis as to the regular forms of the disease, yet the treatment adopted was most successful. The system of the patient was decidedly in a morbid condition, as was testified by the poriginous state of his eyebrows and beard, yet the constitutional action of mercury succeeded in dispersing the bubo. Lastly, the patient having left off treatment prematurely, the bubo appeared a second time, together with a morbid condition of the original site of the ulcer, and these symptoms of relapse were acted upon by mercurial treatment as rapidly as when they first appeared.

CASE 5.—*Primary Syphilis at the orifice and on the outer surface of the Prepuce, with Bubo in both Groins.*—William Healy, aged 22.

1st day. Phymosis without inflammation. Two ulcers at the orifice of the prepuce, each about the size of a pea; excavated, white, and surrounded by a diffuse areola. An ulcer the size of a filbert on the outer surface of the prepuce, right side opposite corona glandis, in the incipient stage of granulation. Glands in both groins in first stage of enlargement, but not very painful. The nitrate of silver was applied as an escharotic to such parts of the sores on the outer surface of prepuce as were in the stage of ulceration, and to the entire surface of the sores at orifice of the prepuce. Four of the compound calomel pills to be taken three times a day.

2nd day. One of the ulcers at the head of prepuce is still covered with slough, but its areola is less distinct. The other sore at the orifice is covered with lymph, and surrounded by the narrow red marginal areola. The ulcers on the common integuments are much more superficial, and their surface is of a nut-brown colour. All the ulcers were gently stimu-

lated with the weak solution of the nitrate of silver, and the compound calomel pills were ordered to be repeated.

3rd day. Both ulcers on the orifice of the prepuce have acquired a red margin. The groin is well. The ulcers on the common skin of the penis are healing rapidly. The treatment of the preceding day was continued.

5th day. Sores at the orifice of penis greatly diminished in size. Those on the outside of penis healing rapidly; groin well; mouth not sore. Same treatment continued.

7th day. Sores at the orifice of the prepuce much less; those on the common skin of the penis nearly healed; mouth not sore. The pills and solution of the nitrate of silver repeated.

9th day. Ulcers on the common skin of the penis healed. Those at the orifice of prepuce nearly the same as at last report. The pills repeated.

12th day. The sores at the orifice of the prepuce healed, and this covering is much more relaxed than at last report; mouth slightly sore. The pills repeated.

Remarks.—When primary syphilis is seated at the orifice of the prepuce, its cicatrization is always slow when the ulcer is left to unassisted nature. This is caused partly by the stream of urine irritating the sore, and partly by the pressure which urining requires, tearing open the ulcers in such a manner as prevents their healing. Notwithstanding these opposing circumstances, however, the amendment in this case was particularly rapid. It is also to be observed, that the contraction of the orifice of the prepuce, which is always found when ulcers take place in this situation, in place of being more permanent than if the ulcer had not been treated with caustic, relaxed with much more rapidity than would have been expected by those who have not witnessed the action of the nitrate of silver in these cases.

In conclusion, to-day, let me observe, that there are many circumstances connected with the cases which we have considered in this lecture to which it is desirable that I should revert on another occasion.

Whooping-Cough.—Dr. Saudras says, that one of the surest therapeutic means against whooping-cough, is change of air and place of habitation. It is the first thing he recommends, and considers himself authorized to do so from experience. When this is impracticable, he makes use of the belladonna, the root of which may be taken in powder without offence to the taste.—*Bul. Therap.*

CLINICAL LECTURE

BY

MR. BRODIE,

Delivered at St. George's Hospital.

CONCUSSION OF THE BRAIN.—ERYSIPELAS.—DEATH.

Gentlemen,—Thomas Turnham, ex-coachman to the Duke of Wellington, æt. 45, was brought to the hospital Dec. 7th, 1833, at half-past 1 p.m., having received a severe blow over the region of the left temporal bone and orbit, from falling whilst exercising some horses in Hyde-park. When admitted he was insensible and breathed laboriously, and there was a severe contusion over the left eyelid. He spat up a small quantity of blood upon being placed in bed, and was immediately bled by the house-surgeon, and purged with calomel and Dover's powder, and had a senna draught administered to him some hours afterwards. A cold lotion was ordered to be kept constantly applied over the contused eyelid and neighbouring parts.

Dec. 9. Insensible; very restless all last night, drowsy, tosses about a good deal in bed. The contusion of the left eyelid has extended, and is swelled and puffy; great redness over it, but hardly amounting to erysipelas, having more the appearance of diffused phlegmon. Pulse 110, regular, and compressible; skin hot and feverish; bowels open. The prognosis of the case was now unfavourable, from the patient's gross habit of body. He was ordered to take the *Haustus Salinæ* with *Vinum Antimonii*. The *Decoctum Cydoniæ* to be applied to the parts instead of the cold lotion.

Eight *vespere*. The appearance of the contused parts has now assumed that of erysipelas; the redness has extended; pulse quick; very restless, tossing constantly in bed.

Dec. 10. The puffy swelling and erysipelatous redness of the left eyelid have extended over the cheek of the same side; the right eyelid was also swelled and œdematous, and closed up by a dark blush of erysipelatous inflammation, extending downwards and inwards towards the nose, and outwards over the malar bone; pulse 98, and compressible. He has taken a dose of house-physic, and the *Decoctum Cydoniæ* is applied as a lotion to the parts.

Vespere. Very restless, can hardly be kept in bed; pulse 120, full and bounding.

Dec. 11. He remained much in the same state as yesterday. To-day I saw him and punctured the erysipelatous surface of the

left side of the face with a lancet; the punctures bled freely, and appeared to give the patient much relief. He was ordered *Haust. Salin. effervesc. c. Carbon. Ammon.*, gr. iv in excess.

Vespere. Much the same; restlessness somewhat less.

Dec. 12. Appears better; is more sensible; bowels open; understands what is said to him; pulse 110, and full. The house-surgeon ordered him port-wine, which I countermanded, prescribing beef-tea instead.

Vespere. Very restless and irritable; pulse 120, and small. The house-surgeon ordered him port-wine in addition to the beef-tea.

Dec. 13. He died at half-past eight a.m. this day.

Autopsy eight hours after death.—On separating the cranium from the membranes beneath, no particular abnormal appearances were presented. On removing them the superior surface of the cerebrum was tinged, by the fulness of the vessels in the cerebral convolutions. In slicing off the upper surface of the brain, it appeared of a natural consistence; the lateral ventricles were filled with serum, each containing about ʒij. The cerebellum, pons varolii, pons olivare, &c., were firmer and paler than natural. A quantity of fluid was effused at the base of the brain, and pus was found in the orbit of the left eye. The lungs were somewhat engorged, and small in volume. The stomach, liver, and other abdominal viscera, were healthy, but loaded with fat.

This man, Gentlemen, came into the hospital seven days since, having fallen on the left side of his head. On admission the general symptoms of concussion were present; those of compression were not so well marked, the stertor in breathing being very slight. The blush of erysipelas which appeared on the left side of the face, three days after admission, was over the part where he received the blow. The symptoms of concussion never entirely left him, and he could with difficulty be roused from his state of stupor. No very particular morbid appearances are discernible, and, judging from the case altogether, I should say that the man died from inflammation of the brain, as the consequence of concussion. You know we frequently meet with cases of concussion which end fatally from inflammation of the brain, within 48 hours after the receipt of the injury,—before even there is time for effusion to come on. In order to explain the nature of this case clearly to you, I must speak of the injuries done to the brain under two distinct heads,—the one where there is an external wound of the scalp,—the other where no external wound exists. In this case there was no external wound unless you can call the slight graze on his temple a wound. Where there is no wound, the case is called one of "contusion,"—and the effects following a contusion are either concussion or compression, and these latter are the causes of all the symptoms which follow a contusion. Compression implies the fact of pressure existing on the brain from some cause,—a portion of depressed bone, or the rupture of a bloodvessel within the substance of the brain or on the dura mater. Inflammation of the brain, or a tumour within the cranium, may cause pressure in the same manner. Where there is concussion, the animal and sensorial functions are greatly disturbed by the shock, though after death no particular morbid appearance may be discoverable; but the soft nervous texture of the brain is so minute that its lesion may baffle our closest observation.

But to which of these two divisions did this case belong, compression or concussion? The disturbance of the vital functions would lead me to pronounce it to be a case of compression rather than of concussion. If a patient receive a blow, and recover from it after a short time, the case is a simple one of concussion, but if the symptoms be of a grave nature, and last for a considerable time,—if there be insensibility, with complete or partial paralysis of the limbs,—if the pupils be dilated, and the breathing laboured and stertorous, you may generally conclude that these symptoms result from pressure.

But there are intermediate cases between concussion and compression. A person may receive a blow, which may be followed by stertorous breathing and dilated pupils, from which he may soon recover, and these may be caused by a slight degree of extravasation internally, without any very great loss of motion or sensation, and symptoms such as these may be referred generally to compression. The symptoms attending concussion would have been slighter even than these, and it may be as well here to point out to you the general diagnostic marks attending the two states of compression and concussion. In concussion, then, there is a slight degree of insensibility, from which the patient may be, in some measure, roused; the pupils are at first dilated, and then contracted; there is no paralysis of the limbs, or stertorous breathing; or if this latter symptom be present, it exists only for a very short time. In compression there are insensibility and paralysis, stertorous breathing, and dilated pupil,

which is not influenced by the light. If the pupil be either dilated or contracted, it will remain permanently so. Sometimes the pupil of one eye will be contracted, and the other dilated. When there is any extravasation on the brain, there is slight delirium or convulsive action of the muscles, sometimes lasting for one or two hours, which will frequently occur, if the extravasation be only so slight as not even to produce pressure. The symptoms in Turnham's case were dependent on concussion or slight compression—those which generally attend upon concussion, but they lasted longer than is usual in such cases. The post-mortem examination showed the early symptoms of the case to be dependent upon concussion. He was very properly bled on the spot where the accident occurred. It sometimes happens that, after concussion, the heart's action will fail, and syncope will come on; and when the pulse rises, you should bleed the patient. If in collapse, do not wait until complete reaction is established before you bleed, but do it at once, for the brain cannot bear the pressure of the blood upon it, and the blow may have ruptured a vessel; and if reaction is completely established, the vessel may again pour out blood. In these cases, as Mr. Pott very properly observes, you first have concussion and then compression. If you do not bleed when the pulse rises, compression will, of course, come on; and if you do bleed, you will enable the patient to bear the injury better, and to recover from the effects of it sooner. This patient was also bled on the day after the accident, as he had not recovered from the effects of the concussion. I believe the patient may recover his senses sooner if he be bled, but time does much in all cases of this kind, and bleeding is proper also, in order that the patient may better meet the attack of inflammation of the brain, which is so frequent a sequel of concussion. Thus I have given you three good reasons for bleeding in all such cases. In recommending bleeding, I do not advise you to remove large quantities, for you cannot by so doing prevent inflammation of the brain. It will come on do what you will, and will continue for a certain time, and run a certain course, which you cannot stop or check, and all that you can do is to conduct it to a favourable termination. If you take large quantities of blood from the patient, he will not be so well able to bear the inflammation, for you cannot bleed him largely when the inflammation is once fairly established. In cases of this kind, therefore, remove small quantities at a time, watch the patient narrowly, and if the pulse rise, take away five, eight, or ten ounces, at a time, according to the symptoms. Get the bowels well opened, and give the patient such purgative medicines as will induce watery evacuations from the mucous membrane of the intestines, and thus determine blood to them from the brain.

The inflammation of the eyelid in this case differed from the common erysipelatous inflammation, inasmuch as it was not ushered in by any shivering, and presented no defined margin of redness on the skin. The redness here was more likely to arise from diffuse cellular inflammation, as the man was of a large gross habit, and bad constitution,—altogether a bad subject for such an accident. He had also a frequent small, feeble, pulse, which prevented the exhibition of remedies proper for the affection of the head.

We are led to the conclusion that the symptoms depended upon concussion. There was serum found in the base of the brain, and also in the ventricles, consequent upon concussion, inflammation, and effusion. Many of the symptoms of the external affection depended upon the effusion of pus into the orbit of the eye under the scalp and occipito-frontalis muscle. Concussion of the brain is not necessarily fatal. The greater number of cases recover, but not without inflammation of the brain or its membranes supervening, which is not after all very severe. It generally comes on two or three days after the accident, with pain in the head, hot skin, frequent pulse, the insensibility changing to delirium,—the blood, when drawn, exhibiting the inflammatory crust. The symptoms may continue from two or three days to a week or a fortnight, during which time the patient may require bleeding, purging, and starvation. But every now and then, in spite of the most active treatment, effusion will take place. If the patient die soon, you will find only a slight degree of effusion in the ventricles and cells between the membranes of the arachnoid and pia mater. If he bear up for a longer period, pus will be mixed with the serum in the ventricles, and smeared over the membrane of the arachnoid. Under these circumstances the inflammation frequently kills in a short time. Sometimes the inflammation will be so intense as to exhaust the energies of life even before there is time for effusion to come on. Of this I have seen a few examples.

STATE OF

VACCINATION

IN THE

BOMBAY PRESIDENCY.

To the Editor of THE LANCET.

SIR,—As it appears to me that a detailed account of the present state of vaccination in the Bombay Presidency may not be uninteresting to many of your readers, I trust you will give a corner of your valuable periodical for the insertion of the present *precis*.

But few people probably are aware, that the Bombay Presidency is the only one of the three Presidencies in which there are surgeons whose chief and exclusive duty is the propagation of cow-pox. To be sure, in Madras and Bengal there are "superintendents general" of vaccination, under whom are civil surgeons, at certain stations, who have a vaccinating allowance, and one or more native vaccinators under them; but there are no travelling vaccinators.

We owe our present system to the enlightened liberality of the Hon. Mountstuart Elphinstone. He saw that the system as formerly established was one not at all fitted to the wants and habits of a half-civilized and half-subdued population, however well it might be adapted for the meridian of Greenwich, and that it was absolutely necessary to the final establishment of vaccination, that it should be carried to the doors of the people—too lazy,—too poor,—or too ignorant, to come in search of it. He was well aware that the presence of a European officer thoroughly versed in the manners and habits of the natives, would do more to smooth away prejudices than the best native vaccinator. Actuated by these views he divided the whole of the territories of the Presidency into four grand divisions, and to each of these divisions he appointed a European vaccinator, with an establishment of native vaccinators under him. The European vaccinator was exempted from all local control, civil, military, or medical, and was at liberty to carry on his operations in whatever part of his district he might think proper, reporting, monthly, to the medical board at Bombay. The salary was liberal, so that the vaccinator could at any time take a rapid journey, and come suddenly on his native assistants to ascertain the fidelity of their reports, settle quarrels, &c.; and, in addition to the duties of superintending the vaccination, the vaccinator was provided with a supply of medicines, and ordered to give advice and medical assistance to any of the natives who might apply to him. He was also furnished with from six to eight peons, to assist himself and his native subordinates in collecting the inhabitants, transmitting orders, procuring supplies, &c. This plan you will, I think, say was a well-devised one, calculated to be of infinite use, not only as a means of shielding the natives from the attacks of a dreadful disease, but as a means of extending among them a knowledge of the character of the British Government, showing that their rulers looked upon them in rather a higher view than that of mere living machines, created to pay taxes. They had, and still have, need of this knowledge, for even to the present day many of them never see the face of a European unless as a tax-gatherer.

That the institution has amply answered the ends proposed by its founder must be evident to any traveller. It is only to be regretted that the means of Government did not originally allow of a more extensive establishment of native vaccinators, and it is still more to be deplored that the Government should in its late economizing policy have found it necessary to reduce the establishment still further; but of this more hereafter. Meantime I pass on to a detail of the actual working of the machine, and with a view to this I think I cannot do better than communicate the plan I have followed during the three years I have been a vaccinator. These three years having been spent in three of the four divisions abovementioned, I shall begin with Guzerat, a rich, populous, and extensive province, in length about 250 miles, and in breadth about 50, more or less. As each class of the people requires to be dealt with in its own peculiar manner, I shall first give you a slight sketch of the different classes.

The population is, towards the central and southern parts, half agricultural and half manufacturing or commercial. Towards the northern parts it is almost entirely agricultural and pastoral. Large towns in the province are numerous. I speak within bounds in saying that there are at least sixty walled towns, varying in population from 6000 to 150,000 people, besides innumerable smaller towns and villages, for the inhabitants (as in Spain) all congregate in villages, the state of police not admitting of the cultivators living scattered over the country. The population is of a very motley character. In its grand divisions it may be said to comprise the following classes.

1st. *Brahmins*. This class is not very

numerous in proportion to the rest of the population. They are, however, found congregated in great numbers at certain shrines, or spots of reputed sanctity, just like our own black gentlemen in the cathedral towns. The majority of this class is, I should say, indifferent, or unfriendly, to vaccination. When, however, we find them, as is often the case, in the situation of revenue or judicial officers in our colonial government pay, they generally afford hearty and efficient co-operation.

2nd. *Buneeas*, or traders. These are of two kinds, Hindoos and Seceders, or Shrawaks. Both classes, but particularly the latter, are meek, well-disposed, and duly sensible of the benefits of vaccination.

3rd. *Koonbees*, or cultivators. A very numerous class, sober and hard-working. Generally speaking, they readily bring their children for vaccination; but are timid, and require gentle treatment and persuasion.

4th. *Grassias*. A sort of landholders in their own right, sometimes holding rent-free estates, and at other times paying a small quit-rent. This class consists chiefly of rajpoots. There are among them a few Mussulmans. The whole of them are immoderately addicted to opium, savage, lazy, and idle; their habits are too lawless to submit to the control required in the regular army, but they are to be found largely in the pay of Government, as collectors, soldiers, peons, &c. This class is, in general, difficult to be dealt with as to vaccination, being proud, mistrustful, and jealous. Those, however, who are in our own service, are generally easier to deal with.

5th. *Mussulmans*, many of whom are congregated in the cities, but many also of whom are cultivators. The city class support themselves by service, as sepoys, regular and irregular; by the practice of various handicrafts, as dyeing, bow-making, silk-weaving, making confectionary, &c. On the whole, the Mussulmans are fully alive to the benefits of vaccination, but are, in many cases, held back by natural apathy, and by disaffection and jealousy in regard to their women.

6th. *Hindoo Artizans*. This is a very numerous class, comprising carpenters, smiths, tailors, turners, lacquerers, dyers, cloth-stampers, cloth-weavers, bricklayers, potters, &c. &c. These classes are very generally tractable, and give little trouble to the vaccinator; but it is often difficult to get a look at the vaccinated children afterwards, from the intricacy of the lanes and alleys in which these classes often live.

7th. The *Coolies*, robbers from choice, and cultivators from necessity, much given to strong waters and opium, and despising control whenever they have an opportunity. This class is very difficult to be dealt with, and I have always found, that it is only when I am personally present, that I have any success with them. My native vaccinators are generally afraid to trust themselves in a Cooly village, as it is odd but they get a good beating, or, perhaps, a cut with a sword. I had, however, a good deal of success with the Coolies in the north of Guzerat, but found it at first very difficult to persuade them that in registering the names of the vaccinated, I was not intending to carry away, for the use of Government, the most able and stout of the population.

8th. The *Dheras*, or Outcasts. This is rather a numerous class, some being attached to each town and village, and having various and not unimportant duties assigned to them. They are often dissipated, and will eat and drink whatever they can get. It is difficult to get vaccination generally established among them, as the higher Hindoos will often object to allow the vaccine from their children to be applied to a Dhera with the same lancet, and the touching of a Dhera renders a native vaccinator unclean, until he has bathed and changed his clothes. When this class is vaccinated, it is generally after the vaccination of the other classes has been finished for the day.

Such is a general account of the chief classes in Guzerat. I have said nothing of the *Paris*, or *Fire-Worshippers*, as they are confined to the districts of Surat and Broach, with a few exceptions. They are so much accustomed to our rule and habits, that they appreciate vaccination completely. The same may be said of the *Borahs*, a sect of Mussulmans largely scattered over Guzerat, as cultivators and traders. Numbers of them are to be found at every market emporium on any of the great roads, and it is their acuteness, general intelligence, and travelling habits, which enable them to appreciate vaccination so well as they do. The permission and countenance of the high priest of the sect is, however, generally necessary.

I shall now give you a sketch of my general mode of carrying on the vaccinating duties. The situation of vaccinator requires me to be continually moving about during the fair-season, i. e., about seven months out of the twelve. Having finished any given district of country, I then write to the civil authority of the adjacent district to say that I am about to vaccinate there, and to request that his native officers may lend their aid to mine in conciliating the people, and in giving

notices, collecting the people together, &c. Should the rains be close at hand, I then locate my people in the largest towns of the district, and I myself move into a town. So soon after the cessation of the periodical rains as the country is open, the roads are consolidated, and the activity of autumn malaria has somewhat exhausted, and that is generally the case by the 16th of November, the vaccinating officer leaves his winter quarters and proceeds straight to the places where his native subordinates may have been stationed during the past rains, pitches his tent under a spreading tree, as near to a town or village as may be convenient, and having settled his encampment, sends for the native vaccinator employed in the place, and directs him to collect as many of the children who have been vaccinated as he can. It is seldom in Guzerat that above a third of the vaccinated can be collected. Many of the mothers hide them, from dread of a European. However, by the first weekly vaccination-day there is generally a good number assembled, and the vaccinator, having examined, severally, their arms, has an opportunity of satisfying himself as to the correctness of the returns given by his native vaccinator. He also has an opportunity of seeing the fresh vesicle, and judging of its genuineness. At this visit, also, many of the respectable inhabitants will bring their children to be vaccinated under the eye of the European vaccinator. This class, however, generally prefer the vaccinator to come to their houses, as the mothers do not like to go out, and are afraid to trust their children away from the house. I have visited many respectable natives in this way, and have always been received with much cordiality. An ancient chair is generally brought out, or procured for the occasion, the best cotton carpet is spread in an upper room, and a regale of sweetmeats is provided. At such visits, too, I generally find sundry persons of the establishment anxious to have medical advice for some ailment, and interesting politico-geographical conversations are entered into by my host and some of the neighbours. I could amuse you a good deal by relating some of the questions asked, but this is foreign to my present subject. On such occasions, however, I enjoy such opportunities of observing the domestic habits of the Hindoos as no other situation can afford.

Returning to my tent, I give notice through the town that I have advice and medicine at the service of the sick, between the hours of 9 and 12 daily, and this part of my duties is, I assure you, no sinecure. I shall, if you like it, give you a few leaves out of my journal on this subject some day or other. There are few chronic diseases which do not come under my observation at these times. I shall now, however, just mention that a great majority of the cases are "wae" or wind, as they include in this class a very numerous string of ailments, such as pains of the stomach, rheumatism, hemicrania, and even palsy. Having finished my examination of a town or district, I pass on to another, and keep as much as possible in the centre of a district where the work is going on, so that I can diverge to the right or the left, and take a rapid view of what each vaccinator is about.

I alluded before to the degree of willingness for vaccination manifested by the different classes of the natives. The example of the more respectable will often bring in the greater number of children in a town for vaccination; and it is astonishing what effect a little hearty co-operation on the part of the native revenue or judicial officers in a village or town will have, while indifference on the part of those persons renders the lower classes timid and reluctant. I recollect, when at the city of Putum some years ago, where my native vaccinator had been employed for some time previous, and with very small success, that soon after my arrival, sundry respectable Mussulmans requested me to come and vaccinate their children. I did so, and next week had the pleasure to find that applications for fresh vaccination from the arms of those children were very numerous, and that there was afterwards no difficulty found in carrying on the work. At times, when the small-pox rages with virulence, the present danger makes the most ignorant forget their prejudices, and apply for vaccination, and too often is it the case that these put off the application till too late. In illustration of this, I recollect being written to in 1830, by my lamented friend the late Dr. Gordon, superintending-surgeon, north-west Division, begging me for God's sake to send him a supply of matter, and, if possible, a vaccinator, by the earliest opportunity. He afterwards stated to me, that he was surprised on going out of his door one morning to find the whole of his yard completely filled with miserable villagers, many of whom had come seventy miles, from the wildest part of our north-west frontier, bringing with them their little ones, some two in a pannier, others two or three on a bullock or pony, &c. They had fled from the small-pox, which was committing dreadful havock in their thinly-peopled country, and came beseeching the Doctor to vaccinate them; and yet those very

people, had I gone among them at a time when the small-pox was not prevalent, would have been most apathetic, if not refractory.

The year 1830 was a severe one. Small-pox then prevailed extensively, and cut off very many children in districts which the vaccinator had not previously been able to visit. I remember that I was at that time written to by my worthy friend, Joseph H. Jackson, Esq., then assistant to the Collector of Ahmedabad, with a pressing request for a supply of vaccine matter. I sent it him forthwith, and he, with indefatigable zeal, vaccinated crowds of people who came to him from the Kattiawar districts. I have known officers, too, in command of out-posts, do much good in this way.

Having been employed for a year in the Konkan division, I may say a little about it, as affording some interesting details. It is a long strip of hill and dale, extending from the foot of the Ghauts to the sea, thickly peopled compared with what one would suppose, and having many of the villages most romantically situated. Dr. Bell first practised as travelling vaccinator here, and it is probably owing to the excellent beginning made by him that the work now goes on so smoothly. The only villages where it does not succeed well are those chiefly inhabited by Brahmins, many of whom hate us and our institutions most heartily. I may add to these a good many of the villages inhabited by fishermen, who are unwilling and suspicious in numerous instances. The suspiciousness probably arises from the circumstance that these fishermen are subject to a capitation tax, and they have an idea that one of our objects may be to get more accurate returns of the inhabitants for its collection. But, generally speaking, in the Konkan, I have had very little trouble. In visiting the different townlands, I had only to send notice on the previous day, and on passing along next morning I found the whole of the inhabitants, with their children, collected at one spot,—each more anxious than another to have their little ones examined. In this way I was often able to examine three or four villages, when travelling along, in one morning, and I have always found the gratitude of the poor villagers most delightful to my feelings. The consequence of the Konkan, too, as regards its population, is not small, for besides the before-mentioned capitation tax, which brings in to Government, annually, two or three rupees for each able-bodied fisherman, it is from the Konkan that the ranks of our native army is chiefly filled, so that here population reckons as money.

Some of your readers may be anxious to know the degree of protection afforded by vaccination in India against small-pox.

The result of my experience is this, that in the southern Konkan I have heard of the modified disease having attacked villages, but I inquired for those villages in vain. I know that in the city of Surat it has appeared, though I think by no means in so large a proportion as in Europe. In this district, I have tried the inhabitants by question and cross-question, but I cannot get them to admit that the modified disease ever attacks the vaccinated, and, certainly, the inhabitants of the rich pergunnahs of Broach and Jumboseer do show, practically, their belief of this, from the unabated confidence they have in vaccination. This experience is, you will say, at variance with experience in England, but I cannot help that. I give you the fact as it is. I have in the north of Guzerat not been able to ascertain the truth so thoroughly, but I have never heard of any complaints, excepting in one instance, communicated to me by Major Speirs, now superintendent of affairs for Rajpootana. He mentioned that the Ranah of Serowi's two children, who had been vaccinated, had both taken the disease (small-pox), as also numbers in the town (no deaths, however, mentioned). I do not know, however, whether the vaccine taken to Serowi may not have altered its nature, and have become purulent, as it often does in the hot season. I rather think that no European vaccinator had an opportunity of ascertaining this fact. Serowi is remotely situated, and is not under the Bombay Presidency.

Such, Mr. Editor, is a sketch of the present state of vaccination in a great part of the Presidency. Did the finances of the country but admit of a larger establishment of native vaccinators, the result would be still more striking than it now is. I think you must see, too, Mr. Editor, that a person in the situation of a travelling vaccinator, where so much is left to individual zeal and activity, ought to be pretty well paid, particularly as the duties of the situation involve a life of loneliness, and of separation from European society, not forgetting the numerous expenses attending travelling; and accordingly when Mr. Elphinstone organised the department, he fixed the salary at 660 rupees per month (including net pay); and from this sum were to be defrayed the expenses of conveyance of children, the purchase of sweetmeats and stationery, and office expenses, travelling, a fit-out, and the carriage of tents, a government medicine chest, and country medicines, alias Bazar drugs. For all these duties and all these

expenses, in a sultry and unhealthy clime (for Guzerat is eminently so), I don't think you will say that 594*l.* per annum was too much. "Sed dis aliter visum."

Some four years ago, forth came a fiat, reducing the salary of vaccinators from 660 rupees to 410. Now I should have had not the least objection to bear my share in the distress of the times, but surely a diminution of 150 rupees might have satisfied those patrons (I wish I could say "patterns") of economy, who sit in high places. At all events, it might have been supposed, *a priori*, that having been relieved from the burden of half our salary, we should also be eased of that of *public* expenses, formerly paid out of the salary. Yet would you believe it, Mr. Editor, I was civilly told that the salary having been originally fixed to include every expense, public and private, it must continue to do so until the Court of Directors might choose to modify their order on the subject, for with them the measure was *said* to have originated! Memorial on memorial has been forwarded to that body, but as yet without any result, although three years might have afforded space for at least an *answer*. I think that the Hon. Court is, with all its faults, about the best-working government we have, and I am not without hope that should these lines fall under the eye of some of the twenty-four, they may induce them to examine into the case of a set of men who are working, uncheered by praise, and unrewarded by fame, to forward the happiness of the subjects of our widely-extended Indian empire. They may then say whether it is right that an individual, enjoying a yearly allowance of 370*l.*, should out of that sum provide for the same public expenses as he did out of a salary of 594*l.* Our case ought to have been considered at the time when that of regimental-surgeons and assistant-surgeons was decided on, and we had every right to participate in the benefit accorded to them.

Our local rulers, taking the order of the Court of Directors in the most narrow sense and construction, kept us down, and do continue to keep us down, to a mere subsistence, and while all of them in private admit the hardship of our case, profess themselves unable to better us, and, as yet, no one vaccinator has received, as a reward for his activity, an appointment of a better description.

I remain, Sir,
Your most obedient servant,
A BOMBAY ASSISTANT-SURGEON.
India, 1833.

ON TRANSFUSION

IN PRESENTATIONS OF THE PLACENTA.

To the Editor of THE LANCET.

SIR,—About 150 years ago the operation of transfusion made a great noise at Paris. Etmuller performed an infinite number of experiments in which he injected different liquids into the veins of a dog. M. Denis imagined that, by the transfusion of blood, the human frame in the last stage of decay would suddenly feel renewed life. Unfading youth, beauty superior to time, and existence which defied the grave, were to be the results of the wonderful discovery. Subsequent experiments, however, destroyed, in some measure, the pleasing illusion. The deaths of so many victims resulted, that Parliament at last put an end to the sacrifices at this altar of fashionable novelty.

Forty years of experience convinced the French that injecting liquors into the system by the veins (although promising much at the time of operating) seldom failed to induce premature death. It may be urged that the operation at the present day is more skilfully performed, and is modified in such a manner as to become perfectly harmless, supposing it to do no good; but I am reluctant to believe that any member of the medical profession would submit to have the experiment tried on himself, however modified or however skilfully performed. In doubtful cases, when the practitioner is at a loss how to act, an uncertain remedy is perhaps better than none, but surely this rule cannot apply to presentations of the placenta, where the loss of blood is dependent on a lesion of the bloodvessels, and where, until the cause is removed, injecting blood into the system would only tend to aggravate instead of restraining hemorrhage. The practice of midwifery has taught us that presentations of the placenta require immediate assistance. If the accoucheur waver through timidity, or hesitate to follow the experience of ages, his patient is lost. To presume to speculate under such circumstances, would only serve to misguide young practitioners, and lead them to commit irremediable blunders. When the cause of hemorrhage is obviated, it is not uncommon to see patients recover in a surprisingly short time, often contrary to the expectations of medical men. I remember a case where one of the oldest and most experienced practitioners in the City of London gave it as his opinion that nothing could save life, in which, however, the child was turned and extracted, and

the patient did well, not having a single bad symptom, and she is now alive. Had a few ounces of blood been injected into the system prior to the operation, probably the case would have been published in THE LANCET (like that of Dr Waller*), and handed down to posterity as establishing an aphorism in midwifery, that in presentations of the placenta "as long as the husband will bleed freely for his wife, the medical attendant need not despair." I am, Sir, yours truly, D. LEWIS.

28, Bunhill Row, Finsbury,
Jan. 6, 1834.

WESTMINSTER MEDICAL SOCIETY.

Saturday, January 4th, 1834.

Dr. GEORGE GREGORY in the Chair.

SCARLATINA.

THE early portion of the evening was devoted to the consideration of medial topics having temporary and practical interest.

Mr. KING first broke silence, and drew attention to the subject of extreme swelling of the tonsils in scarlet fever, and the great debility supervening on that disease, with a view to elicit some information thereon from the Society. He had observed, that none of the usual antiphlogistic means, however powerful, possessed any considerable effect in reducing the bulk of the enlarged tonsils in scarlatina, though the symptoms were often so very serious and distressing as to make their successful treatment a matter of the highest moment. The enlargement produced great obstacles to mastication and deglutition, and congestion of the brain seemed decidedly apparent. Where the patient was nervous, and apprehended suffocation, the symptoms were frequently dangerous. He had himself produced a marked and surprising degree of relief by introducing into the tonsils a long-pointed bistoury, covered with a piece of lint, to within about an inch, or an inch and a half, of the point, and then carrying the instrument from before backwards in a line with the cheek, taking care not to extend it upwards, from fear of perforating the pharynx, or any of the large vessels. He thus cut the amygdalæ completely through, leaving upper and under portions. The patient then gargled the part with hot water, when free bleeding followed, and astonishing relief was obtained. The last case on which he thus operated was that of a medical man, to whom he had been called by Dr. Probert of Bury, and there the happiest result followed. With respect to the extreme debility which followed scarlatina, however slight the attack, a case had occurred to him of rather a singular nature, in which hæmaturia took place. The urine appeared to be mixed with a considerable quantity of blood, but there was no pain, nor any symptom of disease in the bladder or kidneys. The patient was a little girl, aged 11.

Mr. DERMOTT said, that the puncturing of the tonsils was a practice very much pursued by Mr. White, at the Westminster Hospital, and which he (Mr. D.) considered not only relieved the patient from the unnatural congestion of blood, but excited the absorbents.

Mr. HUNT thought it was one of the nicest points in the practice of scarlatina to avoid ulceration of the tonsils; he presumed that this practice of puncturing did not lead to it. With regard to the debility following scarlet fever, the treatment had wonderfully changed during the last twenty years. Very little was now done in the early part of the disease, the great object being to avert the succeeding typhoid symptoms.

Mr. GREENWOOD was disposed to attribute the swelling of the tonsils to an inflammatory diathesis unconnected with the scarlet fever.

THE ONE-FACULTY RESOLUTION, AND THE LATE BALLOT.

The subject having dropped, the CHAIRMAN informed the members that they might now enter upon the subject of the notice lately given by Dr. Epps.

Dr. EPPS, in compliance with the intimation, rose and addressed the meeting. He had, he said, found that his "notice" had occasioned considerable discussion in the public prints, but he wished it to be understood, that he entered on the question without the slightest degree of party feeling, and without having consulted any one as to the propriety of giving such a notice, nor had he spoken to a single member of the Society since the last meeting, to ascertain whether it was likely that his motion would receive support. He was absent when the ballot proceedings took place, and therefore the notice he had been induced to give was founded on the published reports of them,—proceedings which he considered to be perfectly inconsistent with the regulations and interests of the Society, and the dictates of common sense. (*Hear, hear.*) Three nights had been occupied in discussing the question of medical reform, and several resolutions were passed. Those resc-

* Vide LANCET of Dec. 28, 1833.

lutions were read on the first night, and so extensively published that no gentleman could be taken by surprise with respect to them. They were also passed almost without opposition, up to the eighth, when a discussion arose, and amendments were moved by Mr. Walker and Dr. Gregory. The former was withdrawn that unanimity might exist, and the latter, on being put to the vote, was declared to be lost beyond all question, the eighth resolution being subsequently declared by the Chairman to be indisputably carried. But Dr. Gregory demanded a ballot on the question, and in the face of the declaration of the Chairman, that he had no kind of doubt as to the passing of the resolution. How came it, then, that the ballot was postponed until another night? Whence did the Chairman obtain his authority to postpone the ballot, when there was abundance of time to take it on the same evening. (*Hear, hear.*) The Chairman must have adopted a rule without consulting the Society upon its propriety, and the subsequent proceedings had thus placed the Society in a most absurd position, and completely stultified its acts. But there was another yet stronger circumstance, for after the eighth resolution had been carried, and the amendment to it lost, Dr. Gregory himself moved a resolution, the ninth, which required that a petition to Parliament should be drawn up, embodying the principles of the *preceding resolutions*, and which ninth resolution was carried unanimously. (*Hear, hear, hear.*) And yet on the next evening the Society proceeded to ballot on the amendment which had been lost, and the motion which had been carried and ordered by the Society to be embodied in a petition. If this was not an absurd proceeding, nothing could be so characterised. The demand for the ballot was called a burst of disappointed feeling, which was not meant to last, and the fact of Dr. Gregory having himself moved the ninth resolution tended to confirm it as such. Why then, he (Dr. E.) demanded, was the ballot allowed to be taken? At any rate why was it postponed? The whole circumstance was so inconsistent with sense and reason, that he felt it to be his duty to take the sense of the Society upon the proceeding. He should be glad to hear the opinion of some other member on the subject. Dr. Epps then, on the decision of the Chairman that he (the Chairman) would hear no further observations on the matter until the notice of Dr. Epps was put as a motion, and had been seconded, framed his notice into a motion, when it was seconded by

Mr. Hunt, who said that he did so with much pleasure, from a feeling he entertained that he was thus performing an act of justice towards an individual who might, in consequence of the motion, be rendered liable to a suspicion that he was not that warm advocate of the character and interests of the Society which he was sure he wished to be considered. It too frequently happened that when objects of high importance were to be attained, impressions existed that influential men would oppose them. The *Westminster Medical Society*, however, had at least one high-spirited member on its list, who set at nought all considerations when the good of the Society was at stake, and who had proposed, that, at all hazard, medical reform should be discussed there, himself introducing it to their attention. He alluded to their present Chairman. True, when moving in the matter he had said he did not wish to be much of a debater, and he wished the speaking to devolve upon others; but he procured meetings of medical men to consult together on the subject. At those meetings (the preliminary meetings to the late reform debate) certain resolutions, virtually the same that were afterwards passed by the Society, were submitted to notice, and underwent careful discussion, after which the gentlemen assembled (eight in number) were asked whether any of them particularly objected to the resolutions as finally completed. No difference of opinion on them existed. They were assented to by all,—by their present Chairman amongst the number,—and those resolutions were presumed to embody the chief complaints of the profession, and to contain only such things as ought to be expressed by the Society. After, however, one more examination, it was suggested that the eighth resolution, as it then stood, did not contain enough,—was not sufficient in its views. It was accordingly amplified, and with the other resolutions, submitted to the Society. Seven were passed unanimously. The eighth met with opposition. A stumbling-block was placed in its way by Dr. Gregory himself—by the very gentleman who penned it to meet the objects of the Society. His earnest wish undoubtedly was that his own darling child should be made so perfect and unexceptionable that it should be carried without a dissentient voice in the Society. Yet that very child had he tried to suffocate. Two or three words of explanation from him, however, could not fail now to set the whole thing at rest. Perhaps Dr. Gregory merely intended to feel the pulse of the Society. It would seem that he did not expect a single hand to be held up in favour of his own resolution, yet the Society had been made

to appear before the public and their professional brethren as mere idiots, who meant one thing and performed another. He would now wait for that explanation from the chair, which he felt, with the most perfect confidence, would be given, before he made any further observations on the subject.

The CHAIRMAN.—Gentlemen, the motion having been moved and seconded, I am ready to hear the observations of any gentleman who may choose to address me.

[Profound silence here prevailed, and continued for some minutes, the Chairman moving neither hand nor foot after he had resumed his seat, but continuing the whole period with his eyes bent on the desk beneath.]

Dr. FERGUSSON at length rose to express his regret that anything had occurred to disturb the unanimity of the Society. A sense of the justice of the eighth resolution had led him to admit its propriety, though not to its adoption now. Both Dr. Epps and Mr. Hunt appeared to him to have travelled from the record on this occasion. The real question before the Society was this,—Was a certain proceeding of the members legal or illegal? Was there, infact, a law bearing on the point. He had requested the Secretary to overlook the by-laws, and he believed there was none. The Society, therefore, must be guided by precedent or custom. Yet here they were equally in the dark, for the case was unique, and so he hoped it would remain. His opinion was, that as the Chairman on the 7th of December had declared that the ballot could not take place until the preceding evening—

Dr. GREGORY.—Succeeding.

Dr. FERGUSSON,—and as the Society acquiesced, and as the Society on the succeeding evening also concurred in the ballot, by permitting it to proceed,* no objection thereto could now be taken. The point, therefore, was easily decided,—the matter must stop where it was,—the Society could not reverse proceedings thus confirmed.

Mr. GILBERT BURNETT (the chairman on the 7th) had waited just now in expectation that the explanation sought by Mr. Hunt from Dr. Gregory would have come (*hear, hear, hear*), or he should have risen before to say, that the number of hands held up, on the 7th of December, for the 8th resolution, appeared to him to be so decidedly in its favour, that although he might not be justified in saying that it was passed unanimously, yet he must now declare that no doubt existed in his mind of its having been carried by a great majority. (*Hear, hear, hear.*) He certainly did hear a call of "ballot," but he regarded the cry as such a slight ebullition of disappointment as an individual might feel on the loss of a favourite motion,—nothing more. Yet he (Mr. B.) said at the time, that if a ballot was really demanded, and the demand was properly given to him before he left the chair, it should take place on the succeeding evening. No objection was made to that at the time, and the case being a novel one, it appeared to him the best course to pursue. Probably from its happening that the person who demanded the poll was the same individual who moved the 9th resolution, the written demand for the ballot was delayed until the very moment at which he (Mr. B) rose to declare the meeting adjourned; therefore, the ballot could not take place that evening.* Though he thought at the moment that the demand for the ballot was an undue appeal from the accuracy of the chairman's decision, he was bound to say that nothing had taken place to justify Dr. Epps's remark that the proceedings were opposed to common sense. At the same time he admitted, that the proceedings of the Society, of late, had not been wholly regular on several points. Still as, by the rules of the Society, no member could be said to be taken by surprise on this occasion, it was not becoming any gentleman to attempt to upset the decision of the 14th, nor, he thought, had the Society, under the circumstances, the power to alter what had been done.

Mr. HUNT here rose to continue the observations which he had intermitted with a view to afford the chairman an opportunity of explaining his conduct, upon which

Dr. COPLAND rose to "order," and demanded that the rule of the Society, which it was in the power of the Chairman to enforce, that no member should speak twice in one night on the same subject, should be now complied with, and he hoped that the Chairman would refuse to hear a second speech from the gentleman before him.

Mr. HUNT said, he would bow to the Chair if required, but certainly not to the rebuke of any other member offered in the manner which Dr. Copland had presumed to use. He differed essentially from the last speaker. The adoption of Mr. Burnett's advice would open a door to destroy

* Dr. Fergusson forgot that the Chairman of the 14th peremptorily refused to hear protests from any quarter.

* It is farther to be remembered, that at this time the great bulk of the members had departed, and the majority of the remainder were so occupied in taking leave, that four-fifths knew nothing of the little Gregorian proceeding.

the Society. The admission of Mr. B., that the eighth resolution was passed so nearly unanimously, was of the utmost importance. Some irregular proceeding afterwards took place in an empty room, which had placed the members of that Society in a most difficult and absurd situation, and had at once put aside months of labour which were intended to benefit the profession and Society. To permit this was out of all question.

Mr. DILLON considered the proceeding of the ballot to be wholly irregular, inasmuch as Dr. Gregory had moved the ninth resolution after calling for the ballot. He should vote in favour of the present motion.

Dr. JAMES JOHNSON said, that however anxious some individuals might be to get themselves out of the scrape of inconsistency by referring to laws, existing or non-existing, it undoubtedly would be the opinion of every one that the Society had committed itself in a very extraordinary manner (*hear, hear*); in the first place by the gentlemen who had the management of the reform resolutions agreeing unanimously to them; and in the next place by one of the members of the preliminary Committee moving an amendment upon a resolution which he himself had undertaken in the Committee to draw up from different proposals which were made in the Committee and handed to that gentleman. (*Hear, hear, hear.*) That was an unaccountable piece of inconsistency, and had been, and would be, highly detrimental to the Society. The Society would suffer also in the estimation of the profession at large, from the fact that although the eighth resolution had, according to the statement of the Chairman himself, been carried by a great majority, some gentlemen had, on a subsequent evening, put their hands into the black hole of a black box, voted against it, and said they had repealed it. That could not fail to be taken as a strong proof of the bad effects of the ballot on such occasions. Had a ballot taken place on the same evening that the resolution was first opposed, or had gentlemen been divided by retreating to the two sides of the room, there could be no doubt that the resolution would have been carried by a great majority. Yet on a subsequent evening,—he (Dr. J.) would not say how it had been managed,—by some means or other the Society had contrived to assassinate their own offspring in that black box. (*Hear, hear.*) He cared little about the resolution, because it had always been his opinion that the less that was said to the legislature about remedies the better; but as the motion brought forward this evening by Dr. Epps related merely to the proceedings on the 14th be considered, the Society would stultify itself still further, if it did not acknowledge that it had been made to act on the 14th of Dec., contrary to the dictates of common sense, if not contrary to law. (*Hear, hear, hear.*)

Dr. EPPS, in reply, admitted there might be no precedent to guide them, and he was glad of it. His pride as a member would be much abated if he found the Society indisposed to negative the proceedings which formed the subject of debate.

The CHAIRMAN now proposed to take the sense of the Society on the motion, and said it would be *better to do so* forthwith *by ballot*.

Several members cried out in astonishment at this proposal, and

Mr. CHINNOCK objected to the ballot on the ground that it was contrary to law and custom.

The CHAIRMAN however persisted, and pronounced the objection to be out of order.

Mr. GREENWOOD trusted the Chairman did not desire, in a case of such importance, to insist on any course which might chance to burke the proceedings (*hear, hear*), though the proposal looked very like such an attempt. He objected to everything of a tricky nature, and agreed with Mr. Chinnock, that to take the vote by ballot was wholly irregular.

Mr. CHINNOCK again rose and said, he could not forget that Dr. Gregory was the very person who proposed on a late occasion, where the ballot was usual (on the admission, we believe, of the ex-officers of the Aldersgate Dispensary as honorary members of the Society), that it should not be used, and he was the very first to break through that law. He should take the opportunity also of saying, that he thought the President of this Society was bound to make some explanation to the members of his late conduct, and he was surprised that that explanation had been so long withheld.

Observations of a like nature having been made also by other members,

The CHAIRMAN again exhibited his unwillingness to take the vote by a show of hands, and said that if any member present would request of him that it should be decided by ballot, he would certainly insist upon that mode of voting, as the law required him to comply with such a demand made even by one person.

A voice, very close to the chair, here faintly said "Ballot," and Dr. Gregory returned a thank-you nod to the person in token that the sound had caught his ear; upon which

Dr. JOHNSON protested against such a course of proceeding, and demanded the show of hands, saying, that if the gentleman who had uttered the word "ballot" did not like to show his hand in favour of the late proceedings, he should be at liberty to give his vote without acknowledgment of his name.

The CHAIRMAN still urged the ballot, and said that even one individual had a right to claim that protection which the President had power to afford him, by taking the sense of the Society by ballot, and since even one person had claimed it on the present occasion, he should feel it his duty to enforce that mode of voting. He then became much confused, and read the resolution of the Society in support of his determination, which says, that if any person demands a ballot on a "scientific question," it shall be taken on the *following evening* at nine o'clock.

Dr. JOHNSON said, that this was not what was meant by a "scientific question."

The CHAIRMAN said that notwithstanding the objection, he considered this to be a motion brought forward so far in accordance with the rules of the Society, as legally to require a ballot if demanded. Besides, the custom always was, to take the opinion of the members by ballot. Members, for instance, were always balloted for.

Mr. PETTIGREW submitted, that the motion should be decided by a show of hands. The draft of a series of resolutions had been submitted on a former evening by Dr. Gregory himself to the Society, and the sense of the Society taken upon every one of them by a show of hands. This was not a "scientific question," and certainly did not require the ballot.

Mr. JOHNSON said, that he had been Secretary to the Society for a considerable time, and could say, that whenever a single wish was expressed to have the voice of the Society taken by ballot, the ballot was invariably resorted to.

The CHAIRMAN said, that under the circumstances of the case, the Society must submit to the exercise of that discretion which the Chairman always had the power to use. He considered that he should best serve the interests of the Society by enforcing the ballot.

The ballot was then taken, when there appeared

For the motion of Dr. Epps, that the proceedings of the 14th were not consistent with the rules of the Society, the 9th resolution having been carried before the ballot was taken 44

Against it..... 18

Acclamations followed the announcement.

Dr. EPPS then moved that the proceedings of the meeting of December the 14th, 1833, in so far as referred to the ballot then taken relative to the 8th resolution and the amendment, be rescinded.

The CHAIRMAN intimated that he was desirous of taking the opinion of the Society, as to how far it would be right to proceed with this motion before the next meeting.

Several MEMBERS, however, demanded that a show of hands should be taken upon it forthwith.

The CHAIRMAN requested to know if any one member was desirous that the vote upon this motion should be deferred till the next meeting of the Society. (*Cries of "No, no," all around.*) He then wished to be informed if any gentleman present desired the opinion of the Society to be taken upon it by the ballot.

A considerable pause ensued, during which the appeal of Dr. Gregory remained wholly unresponded to.

The CHAIRMAN then said, that as it appeared to be the feeling of the Society that he should take the vote by a show of hands, although it seemed to him that it would be more regular to have recourse to the ballot, he would submit it to the Society by the former mode. He accordingly did so, when there appeared

In favour of the motion a great show of hands. Against it, *three*. It was accordingly announced to be carried by a great majority; shortly after which the meeting separated.

THE LANCET.

London, Saturday, January 11, 1834.

AN *apparent* submission to public opinion is one of the striking and peculiar characteristics of the conservatives. If it were not for this affected acquiescence in the improvements suggested by the rapidly increasing knowledge of the community, the gangs of corruptionists would long since have been driven from their fastnesses, and thrown headlong into the quagmires which surround their dens of corruption. When fighting under their true colours, and, consequently, unaided by that false and assumed attribute of wil-

ingness to "reform" abuses, they become, instantly, the most insignificant of opponents. When divested of the cloak of falsehood, what must be their language? "We are desirous of maintaining the integ-"rity of existing institutions by an appeal "to the inviolability of the law. We object "not to the correction of abuses which "are proved to be the growth of ages; "we oppose not the correction of acknow-"ledged errors, but we are resolved to "hold out to the last in resisting every "projected change in the Charters and "Acts of Parliament, under the authority "of which the Medical Colleges and Cor-"porations have for so many generations "exercised their important functions." If the feelings of the conservatives be not in strict accordance with such a declaration as this, then is their conduct grossly and hypocritically inconsistent; because they display considerable industry in denouncing those reformers who contend for the necessity of effecting a change in the *law*. If the conservatives limit not their notions of reform to the correction of "abuses," then is the difference between them and the reformers a question of degree, not one of principle, and both parties are equally entitled to the appellation of "revolutionists."

If the President of the College of Physicians, then, be desirous of retaining the respect of the honourable members of his own party in Parliament, let him discard all courtly and collegiate finesse, and boldly and openly declare the extent of his demands with respect to the improvement of our medical discipline. Does he seek for the institution of a Royal Commission with a view to the correction of existing "abuses" in medical government, or is he solicitous that an inquiry should be pursued, that better laws may be framed for securing the rights of medical practitioners? The reformers show no coyness in answering questions of this description. They declare frankly that it is their object not only to lop off the abuses which sprout like so many fungi on the walls and pillars of our medical corporations, but to reconstruct a new temple, with materials that will not readily decay, or engender those foul corruptions which disfigure and render useless the edifices already in existence.

It is, therefore, but a mockery, a pretext, to appoint a commission of inquiry, in order that a remedy may be applied for abuses of the *law*, inasmuch as our courts of judicature are already open to the injured parties. If the existing statutes be framed on just principles, why should we pester the *legislature* with our complaints, when that legislature, according to the doctrine advanced by the conservatives, has already supplied us with instruments fully adequate to our protection? If we do not complain of the *law*, why, we repeat, is any application to Parliament contemplated? Why does Sir HENRY HALFORD endeavour, with unceasing assiduity, to convince Earl GREY and Lord BROUGHAM that the adoption of a Royal Medical Commission would be productive of advantage to the profession? Surely Lord BROUGHAM, the highest legal authority in the realm, is not to be cajoled into the notion that a Royal Commission could prove an engine for filling up breaches which have been made by violations of the *law*. No, no; conservative folly can achieve no such triumph, though it is possible that within the last fortnight some such dialogue as the following has occurred between the Lord CHANCELLOR and the PRESIDENT of the College of Physicians:—

Sir HENRY HALFORD:—"Will your "Lordship, now that two of your Lord-"ship's colleagues are present, allow me, "for only one moment, to refer to a mat-"ter of public business intimately con-"nected with the public health, our na-

" tional scientific fame, and the honour of " that profession to which I have the fe- " licity to belong ?"

Lord BROUGHAM.—" Eh! eh! Sir " HENRY; is there still a reform breeze " rushing through Pall Mall East? I " thought you had well secured the doors " of your temple against all rude north " and north-westers ?"

Sir HENRY.—" Your Lordship's jokes " are far more keen and touching than " even the piercing blast of the iced-capped " Pole. Will your Lordship condescend " to listen for only one moment to two or " three statements and arguments which " I have to urge in illustration of the pro- " priety of appointing, even before the " meeting of Parliament, a Royal Medical " Commission?"

Lord BROUGHAM,—" Your answer to " one question, Sir HENRY, shall decide. " Is it your object, through the instru- " mentality of such a Commission, to alter " the statute law of the realm ?"

Sir HENRY.—" Oh! my dear Lord, ob- " viously not, certainly not; nothing can " be more perfect than the Royal Charters " of the Colleges of Physicians and Sur- " geons, and the Act of the Worshipful " Company of Apothecaries, passed in " 1815."

Lord BROUGHAM.—" Your reply, Sir " HENRY, has relieved both myself and " my colleagues from the painful neces- " sity of hearing your extended catalogue " of grievances, and I feel great satisfac- " tion in stating to you, that the heads of " the corporations—yourself by far the " most respected, eminent, and influential " —hold the remedy for the evils they de- " plore in their own hands."

Sir HENRY.—" How, how so, my dear Lord ?"

Lord BROUGHAM.—" Why, Sir HENRY, " if you have perfect laws, you have only " to act perfectly as the administrators of " those laws. Act up to the principles of " the legal statutes of your government, " and execute the details of those statutes, " rigidly and judiciously."

Sir HENRY.—" But, my dear Lord,"——

Lord BROUGHAM.—" Dear Sir HEN- " RY, I can assure you that you are pur- " suing an improper course, and one which " does not denote the most accurate " knowledge of the subject you have un- " dertaken to investigate."

Sir HENRY.—" But, my dear Lord,"——

Lord BROUGHAM.—" Permit me to ex- " plain thus much. Parliament does not " *execute* the law, but *manufactures* it. The " judges, magistrates, and other such legal " authorities, carry the law into execution. " If you want not an alteration of the law " itself, you can have no object in apply- " ing to Parliament through the medium " of a Royal Commission. If you and your " colleagues allow that there are abuses *of* " the law and *under* the law, why not lop " them off by enforcing the law ?"

Sir HENRY.—" But, my dear Lord—I—I " —with due submission to your lordship's " most profound and respected legal learn- " ing,—I bow with the greatest deference. " But, my Lord, undoubtedly, I admit, I " see it very clearly, exactly;—but your " Lordship will be graciously pleased to " recollect that a motion for a committee " of inquiry into the state of the medical " profession is about to be made by Mr. War- " burton, and fearing into what channels " that inquiry may extend, and conceiving " that it may terminate in the infliction of " an injury on the community and the pro- " fession, the chiefs of the medical corpo- " rations are emboldened respectfully to " solicit the appointment of a Royal Com- " mission."

Lord BROUGHAM.—" Oh, Sir HENRY;— " you are becoming a reformer indeed. " You are anxious the for the adoption " of *two* Committees of Inquiry,—one Par- " liamentary, the other Royal ?"

Sir HENRY.—" My dear Lord, a vein

" of satire runs so fluently and naturally " through your Lordship's powerful mind, " that, owing to the obtuseness of my poor " perception, I experience great difficulty " in selecting those thoughts which you " would have me receive as orthodox, " from the *jeux d'esprit* which your Lord- " ship would have me to place in the " Chapter of Wit."

Lord BROUGHAM.—" Your reputation " for solid learning, Sir HENRY, and sound " judgment, relieve me from incurring the " peril which a notice of your ingenious " diverticulum would entail."

Sir HENRY.—" My dear Lord, as I ac- " knowledge my error in entering the lists " with an opponent of such gigantic " powers, I have only to ask pardon for " my presumption and folly. Fixed as I " am on the horns of a very disagreeable " dilemma, I at once acknowledge the ob- " ject we have in view in soliciting for the " appointment of a Royal Commission. It " is our hope that it would obviate the ne- " cessity of a parliamentary committee of " inquiry."

Lord BROUGHAM.—" That is well said, " Sir HENRY, and spoken like the president " of a medical college which was founded " in the reign of Henry the Eighth."

Sir HENRY.—" I feel greatly flattered, " my Lord."

Lord BROUGHAM.—" Sir HENRY, your " frank and manly openness of character " is well known to the whole of the " English nobility, and is appreciated by " the head of the Royal House. You " have just given me a proof, that the es- " teem entertained for you is not ill- " bestowed. A deceitful petitioner would " have concealed the object of his applica- " tion altogether. Sir HENRY, your high " character is a proof, that the explana- " tion you have just given, as to why it is " desirable to appoint a Royal Commis- " sion, was a candid acknowledgment. " Had it been made by a baronet of un- " known honour and virtue, it might have " been regarded as the confession of an " immoral purpose. Ha! ha! Sir HENRY,

" ' The devil was sick, the devil a saint would be ;
" ' The devil got well, the devil a saint was he.'

" Farewell Sir HENRY."

Nothing is more certain than that a Royal Commission is sought for, in the hope that it would smother or neutralize inquiry. The conservatives believe, possibly, that object to be one of praiseworthy consideration, but it is not likely to be tried by their standard amongst the profession at large. There is not an argument which can be adduced, there is not a shadow of pretext which can be shown, for setting on foot either a Parliamentary or a Royal investigation into medical abuses, unless it be so conducted as to lead to a thorough remodelling, we may say to an abrogation, of the existing medical statutes. It has always been considered, as is explained in the foregoing dialogue, that the law is capable of correcting its own abuses; but when the law itself is defective, the evils cannot be altered or amended without the interference of the legislature. Unless, therefore, the conservatives avow that it is their resolve to endeavour to preserve, by every conceivable stratagem, the statutes of the medical corporations as those documents are now framed, let them, we conjure them, not hazard a single expression in favour of a Royal, or any other Commission, because the abuses of which they so loudly complain, arise, according to their own statements, not from an imperfect *state* of the law, but out of the *maladministration* of the law. Hence the voices of these conservative gentry should be heard in our courts of judicature, and they ought not to be suffered to contaminate the Council Chamber of the Sovereign by their corrupt and slanderous whisperings in favour of a project which is intended to inflict additional torture on

the legally-qualified practitioners in medicine of England, Ireland, and Scotland.

The time has at length arrived when the conservatives must proclaim what are their intentions, or they must submit to be denounced as hypocrites. If they acknowledge, even now, at the eleventh hour, that they are desirous of promoting a change in the law itself, many of their past crimes shall be willingly forgiven, and we will then discuss with them, in undisturbed good-humour, the extent and quality of those alterations which we consider essential to the preservation and utility of a rational system of medical government.

We refer with anxiety, certainly not with feelings of exultation, to our report of the occurrences at the *Westminster Medical Society* on Saturday evening last. The members of that body have rescued themselves, as we knew they would, from the charge of indifference towards the cause of medical reform. Assured as we confidently were that the members of the Society only wanted the opportunity to show their detestation of the scandalous manœuvre of the Gregorians, of the trick which had been resorted to in order to cheat them out of their almost unanimous vote in favour of a tripartite faculty, we expected the erasure of the ballot proceedings of the 14th ult., as a thing of course. Often have we stated, and here we give a fact in illustration of the accuracy of that statement, that the clique, being destitute of character, are also destitute of influence, unless they resort to intrigue; and the species of intrigue to which they can have recourse when pressed by difficulties, is now displayed to the astonished and indignant senses of the whole profession.

Unnecessary as it is to urge one word in explanation of the propriety of an adherence to the first vote in favour of the "eighth resolution," we shall not occupy the time of the reader with any remarks on that subject. Common sense, common justice, and feelings of self-respect, all combined to demand of the Society the exposure and annihilation of the paltry scheme of the Gregorians. The character of the Society, therefore, for consistency on the question of medical reform, is fully sustained by the erasure from the books, of the minutes of the proceedings which transpired on the 14th of December.

If, however, the stain which was inflicted on the character of the Society has been satisfactorily expunged, what is to be said of the conduct of GEORGE GREGORY? That this man, too, should attempt to brazen the thing out by acting as President (and at a time when the other President was actually in the room!), is of a piece with the habitual effrontery of the conservatives. But he received his reward; and a gentleman who was present informs us that GREGORY resembled a culprit in the pillory far more than he did the President of a Medical Society.

Now, what do we collect from the statements in the report? That GREGORY attended a preliminary meeting, with seven other members of the Society, at which meeting it was agreed to frame the resolutions which were to be brought forward for discussion. In order to place the circumstances in as clear a light as possible before the reader, let us set down a few questions and answers, suggested for the most part by the uncontradicted allegations made by the members during the discussion.

Q. Who attended the preliminary meeting to frame the reform resolutions?

A. GEORGE GREGORY.

Q. Who agreed to the resolutions which were presented to the Society, including the one for the institution of a FACULTY OF MEDICINE?

A. GEORGE GREGORY.

Q. Who drew up the Faculty resolution?

A. GEORGE GREGORY.

So much for the preliminary meeting. Now commences the business of the public meetings. Seven of the resolutions adopted at the private meeting having been carried at the public one with acclamation, the eighth resolution was proposed, when lo! an amendment on that resolution was moved and pushed to a division.

Q. Who brought forward that amendment?

A. GEORGE GREGORY.

Q. A ballot was then demanded on the eight resolution. By whom was it demanded?

A. By GEORGE GREGORY.

Q. On the evening appointed for taking the ballot, who attended and clamoured for taking it on the Faculty resolution and not on the amendment?

A. GEORGE GREGORY.

There's a "conservative" for you! This is one of MACLEOD'S coadjutors. One of your "men of *high moral feeling*!" Oh, how distressing it must have been to observe the signs of the torture which so good a conservative suffered on Saturday evening last! Never were the claims of retributive justice more fully satisfied than at the *Westminster Medical Society* on that occasion. Nothing could have been more perfect. GEORGE GREGORY in the chair—the head of the Society for the time being,—assailed right and left as a trickster, as a paltry manœuvrer in medical politics; as a man who had penned and approved of a resolution in private which he had strenuously opposed in public! But so deeply was he committed, so overwhelming were the charges against him, that not one word did he offer in defence of his conduct. Strikingly extraordinary, too, is the day on which this man was rendered the object of exposure and condemnation before the members of the *Westminster Medical Society*. Singular to relate, it was the anniversary of GREGORY'S outrageous conduct towards the lamented and esteemed JAMES LAMBERT. On Saturday five years, it was, that GREGORY himself stood at the door of that Society, declaring that he would then act as a "police-officer" to exclude the public and the press, when Mr. LAMBERT was accused, falsely and scandalously accused, of having been guilty of "unprofessional conduct." And what is now the situation of GEORGE GREGORY? We leave him to his reflections; but if Mr. LAMBERT was expelled from the Society for alleged unprofessional conduct, is GEORGE GREGORY to be permitted to remain as President over a body which declared, five years ago last Saturday, that it could not allow any individual who had acted in an unprofessional manner towards a professional brother to remain one of its members? Whatever may be the decision of the Society with respect to its chairman, assuredly it must be confessed, that the friends of Mr. LAMBERT find an adequate punishment of the Society for its most unjust conduct towards that gentleman, in the fact, that GEORGE GREGORY is one of the occupants of their President's chair.

In closing this notice of the proceedings of last Saturday evening, we must not forget to remind the independent members of the Society, that this evening (the 11th) it will be proposed to confirm the minutes of the last meeting, when the GREGORIANS —no we forget;—there can be no Gregorians *now*;—the anti-reformers may attend, and, by some ingenious contrivance, once more, for a time, stifle the voice of the majority. It is of great importance while this contest between honesty and fraud is continued, that the upright combatants should not forsake the scene of action. The members of the Society assemble at the *Hunterian Museum*, Great Windmill-

street, at eight o'clock precisely, and the minutes of the preceding meeting are read the moment the Chair is occupied.

We must be very brief in adding our explanations to the negations which were appended to the letter of Dr. Epps, published in the last Lancet. We had no intention of holding up the College of Physicians as an institution which was entitled to the respect and confidence of the medical profession, or to point attention to that institution as a model of consistent medical government. On the contrary, we merely drew a comparison between that College and the other two medical corporations of this metropolis, in order to show that the establishment in Pall-Mall East was, in reality, the best of the three companies, although it was subjected to the largest share of condemnation from numerous highly respectable medical reformers.

Did we not succeed in that object? We believe that the great majority of our readers will instantly reply in the affirmative, although Dr. Epps holds a contrary opinion. That gentleman, also, we are persuaded,—after devoting a little further attention to the laws and management of the three corporations,—will acknowledge that our statements and opinions concerning them are strictly correct. But it is necessary that Dr. Epps should first disabuse his mind of certain erroneous impressions, the existence of which evidently clouds the operation of his judgment.

We did not condemn the graduates, in mass, for having complained in strong terms of the administration of affairs in the College of Physicians; but we expressed our regret that such partial views of medical reform should be taken, as to lead any physicians to condemn, in a tone of bitterness, the entire government of the College of Physicians, while they professed to discover certain acts worthy of admiration in the conduct of the Apothecaries Company. Undoubtedly, if there be points of relief in the latter Corporation, they are far outnumbered in the former. Hence we endeavoured to prove that the College of Physicians was less entitled to incur the displeasure of Physicians generally, than was the Company of Apothecaries. If the "why" be repeated, this is our answer,—That the College of Physicians, the *highest* of our medical institutions, permits, without molestation, the Graduates of every University to follow their avocations as medical practitioners in all the branches of the profession; while the Apothecaries Company, the *lowest* of our Corporations, prosecutes those very Graduates in medicine,—those very Graduates whom the College of Physicians manifests no desire to disturb in their peaceful pursuits.

Again. The College of Physicians willingly receives, as adequate testimonials of qualification, the diplomas of all Universities, English and foreign,—Irish, Scotch, American, French, German, and Italian. The Apothecaries Company not only refuses to recognise such testimonials, but actually *prosecutes* the best qualified of their possessors, if those possessors dare to prescribe and dispense pill, powder, or draught. We do not condemn the Company for not admitting a candidate to examination upon such testimonials, and no other, as their doing so would be acting in direct violation of the statute of 1815.

"But," says Dr. Epps, "when you state "that the Worshipful Company refuses to "examine graduates in medicine of our "chartered Universities, you charge them "with a crime that they are not guilty of; "for," continues our friend, "the Apothe- "caries Company will examine any gradu- "ate, of any university, upon the strength "of the fact of the possession of a degree." Here Dr. Epps presses his defence of the

gentlemen of Rhubarb Hall very wide indeed of the mark, inasmuch as he represents them, in this passage, as gross violators of the law. A short quotation from the Act of 1815, will at once explain to Dr. Epps the extent and bearing of his error:—

"*Section* 15.—Provided always, and be it enacted, that no person shall be *admitted to any such examination* for a certificate to practise as an apothecary, unless he shall have served AN APPRENTICESHIP of not less than FIVE YEARS to an apothecary."

Diplomas, therefore, according to law, *must* be wholly unavailing unless they be accompanied by indentures of apprenticeship.

Dr. Epps considers that the Graduates have as much right to complain of *their* College" as have the Members of the College of Surgeons and the Licentiates of the Apothecaries Company to complain of "*their* Corporations." There is only this slight distinction to be made in the cases thus assumed to be similar;—that Graduates in Medicine, unless they be Fellows and Licentiates of the College of Physicians, are not more legitimately connected with that institution, than they are with the Castle of Skilamkinko, in the Island of Jumpers. If the Graduates, for example, of the Scotch Universities, can maintain a legal claim to the funds, and can exercise a share in the government, of the College of Physicians of London, what is to prevent the Members of the Dublin and Edinburgh College of Surgeons from enforcing the same demand with respect to the College of Surgeons in London?

If Dr. Epps were to become a *Licentiate* of the College of Physicians, he would have some niche of ground whereon to sustain himself in this branch of his argument. But he would scorn to become licentiate of such a body. And why? Because "the *peculiar* feature in the College of Physicians, which makes it stink "in the nostrils of every enlightened "man, is, that no man can become a "Fellow unless he be of a particular religious creed." Now as this passage is placed immediately after the following sentence, "and you point out the circumstance wherein the liberality of the "College of Physicians is manifested, "namely, that they will examine any one "who has a medical degree," it is made by Dr. Epps to *appear* that no person can become a Fellow or a Licentiate unless he be of a particular religious creed, whereas no inference could by any possibility exhibit a more glaring inaccuracy. It is true that the Graduates in medicine of Oxford and Cambridge subscribe formally their approval of the "thirty-nine articles" of the Christian faith, but beyond that they take no oath, and within the last ten years several Licentiates have been admitted to the Fellowship without having been required to subscribe to a single article of religious faith, and Graduates of any religious or no religious denomination whatever,—Hebrews, Turks, "Infidels," or "Heretics,"—may become Licentiates of the College of Physicians, without being required to undergo the slightest pain of conscience by the application, on the part of the College, of any religious test whatever. As these are facts perfectly well understood by the entire bodies of Fellows and Licentiates, it cannot be necessary that we should advance another word on the subject.

THE last Number of the *Excrescence* contains a short article, in its usual Billingsgate garb, against THE LANCET. Amongst other crimes we are accused of "forgery," and this accusation of "forgery,"—not the first time advanced against us in the same "moral" work,—is founded on an assumed "false quotation."

"Every common dauber," says JUNIUS, "writes 'rascal' or 'villain' under his

"pictures, because the pictures themselves have neither character nor resemblance." The amiable conductor of the "Medical Gazette" is not content to state facts, and allow his readers to form the appropriate inferences, but, like the "dauber" of JUNIUS, he is constantly burdening his criticisms with such choice specimens of language as "liar," "forger," "blasphemer," "incendiary," &c. The "moral" man, unhappily, is so full of falsehood, that he necessarily believes all other persons to be as near akin to himself as he is to the Father of Lies. In Number 539 of THE LANCET, we quoted a passage from the "Gazette," which referred in very flattering terms to the professional qualifications of three thousand only out of three thousand two hundred medical practitioners of this metropolis.

In noticing this quotation, the "moral" man of the "Gazette" "wants words"—a very common want with him—"to express "the disgust which has been excited in his "mind by the perusal of a paragraph which "appeared in THE LANCET of last week" on this subject. "It is," says the "moral" man, "but one paragraph, and yet it contains a quadruple falsehood." Passing over the circumstance that the "moral" man does not appear to know the difference between a paragraph and a page of paragraphs, he furnishes us with the following as his proof of the two first "falsehoods."

"First, a sentence is quoted, and attributed to a gentleman, who, so far as we know, never read it—but that is his affair; secondly, it is given in THE LANCET, as if it had been editorial in the Gazette, though the passage is from the letter of a correspondent."

That we were justified in making no distinction between what are called the communications of "correspondents" and the "editorial" articles which appear in the "Gazette," we have the "moral" and literal authority of the "Gazette" itself. We copy the following passage from No. 265 of the "Gazette," page 422:—

"Be it known, then, that the effusions which have so nearly driven our contemporary * into frenzy, were written—by no one: no man—nor woman neither—can claim them as their own."

These words—points, dashes, and all—are copied, with strict fidelity, from the "leading article" of the "Gazette" of the above date; and we will now extract another passage from the very page which has furnished us with this rich literary *morceau*:—

"We will further declare, for his gratification, that on no two occasions, when he has been goaded to more than usual ferocity, has the blow come from the same hand: some are living, and some are dead—some we do know, and some we never did know—to whom the merit is due of having aimed the shafts which have sunk so deep, and which have rankled so long."

In the whole literature of England the parallel of these acknowledgments is not to be found. We do not allude to the unequalled stupidity of the composition, but to the unexampled want of principle necessarily inherent in a journal which has been thus conducted. Here is a writer who avows that the most infamous attacks on the moral private character of his literary antagonist, have been unhesitatingly published by him, although received *from the hands of persons* UNKNOWN!

We shall now refer to the Number of the "Gazette," published on the 28th of December last.

Dr. JOHNSON, at one of the late meetings of the *Westminster Medical Society*, complained of the conduct of the Editor of the "Gazette," and observed that attacks from that quarter were the less excusable, inasmuch as he (Dr. JOHNSON) had readily served the Editor in an election which took place a short time since at St. George's Hospital. In short, Dr.

* THE LANCET.

JOHNSON referred directly to RODERICK MACLEOD.

Now how does the "Editor" of this "Gazette" attempt to cast off the double charge of ingratitude and unfair criticism towards Dr. JOHNSON? While noticing the proceedings of the Society in his miscellany of the following Saturday, he appends the following note to his "leading article" of that week.

"When an individual is alluded to as having written any article in this journal, we conceive it to be his business, not ours, to admit or deny it; it is, however, rather amusing to us to observe Dr. Johnson's inference, seeing that *the three last leading articles*, which have annoyed him so much, *were each written by a different* person, though, of course, by adoption, they all became OURS.—ED. GAZ."

After these confessions, with what grace or propriety can the CERBERUS of the "Gazette,"—for he has told us that the "leading articles" of that production have not been written by MAN or WOMAN,—with what grace or propriety can this CERBERUS accuse a journalist of "falsehood," because that journalist happens to have made no distinction between those articles which are printed as "Editorial," and those which are inserted as "Epistolary" communications? If the "no man," the "no woman," of the "Gazette," be unacquainted with his associates,—*its* associates,—the active participators in its crimes,—surely we may be excused for not having recognised their very equivocal dissimilarities. The two first "falsehoods," therefore, if "falsehood" there be any, are the legitimate offspring of the many-headed monster of the "Gazette,"—a journal whose editorial articles have emanated from "no one,"—no MAN, no woman.

In proof of the two other alleged "falsehoods," he observes, "Thirdly, it is quoted "as advanced in support of opinions which "the writer in the Gazette argues against; "fourthly, the passage, as it appears in "THE LANCET, is a forgery, the words "and meaning being totally changed to "effect the purpose of misrepresenta-"tion."

With respect to the charge of "forgery," our amiable and "moral" accuser has himself acknowledged,—as will be seen above in his explanation of the pretended second "falsehood,"—that the passage is from the letter of his correspondent. How *we* could *forge* a paragraph, which actually appears in the communication of one of *his* correspondents, he has not condescended to explain. Of the third alleged "falsehood," it may be stated that the writer in the "Gazette" adduced the state of the profession, as represented in the paragraph, as A FACT, and he offered his opinions on what possibly *would* have been the condition of the profession, had the College of Physicians adopted a line of government which the writer then explained. In order, however, that the disgrace of "misrepresentation" may fall where it is justly due, we shall here insert the lengthened sentence whence we copied the calumnious passage, when it will be seen whether its "words and meaning were totally changed "by THE LANCET to effect the purpose of "misrepresentation:"—

"If the College had acted on this plan, how different would be the present position of the profession—everything would be in its proper place—physic would repose under the protection of the College of Physicians, surgery under that of the College of Surgeons, and Apothecaries Hall would attend to its proper functions—viz. the regulation of the pharmaceutical department, leaving the practice of physic to those that have carefully studied, and may be presumed most thoroughly to understand it; so that instead of 200 Licentiate Physicians, 1000 Surgeons, and more than 2000 Apothecaries, all engaged in the practice of physic in London, for which, however, the first 200 only are ostensibly qualified by appropriate studies and examinations, we should have some 1500 to 2000 physicians of both classes, 400 surgeons at the outside, and some 300 or 400 apothecaries, or properly-educated phar-

macopolites." (The article was signed "Civis Medicus.")

Now then, with whom does the charge of "falsehood" rest? The sentence extracted from the passage, and inserted in THE LANCET of the 28th of December, stood as follows:—

"Out of upwards of three thousand two hundred licentiate physicians, surgeons, and apothecaries, all engaged in the practice of physic in London, two hundred only are ostensibly qualified by appropriate studies and examinations. The two hundred who, only, are ostensibly qualified to practise by appropriate studies and examinations, are the licentiate physicians."

Was it not alleged, in the foregoing extract, that there were more than three thousand physicians, surgeons, and upwards, practising in London? Was it not stated in the "Gazette" that out of that number there were only 200 ostensibly qualified to practise by appropriate studies and examinations? And was it not stated in the same production that the 200 were licentiate physicians? Beyond this we made no extract, no allegation. The charge of "falsehood" or "misrepresentation" certainly does not abide with THE LANCET. But journalism ought not to afford protection to individuals who, while they profess to govern their conduct by the purest principles of "morality" and "good feeling," hesitate not to utter the foulest accusations respecting the character and conduct of opponents by whom they have been fairly driven out of the honourable and open field of literary warfare. Journalism, we repeat, ought not to shield these pests of society. Hence we do not hurl back the charge of "falsehood" against the "Gazette," because that stupid jumble of ink and paper cannot feel the indignation of the profession, wherefore we shall be under the necessity in the next LANCET of speaking in tolerably precise terms of RODERICK MACLEOD himself. In the mean time we insert the following letter which we have just received from his correspondent "Civis Medicus."

LETTER FROM "CIVIS MEDICUS."

To the Editor of THE LANCET.

SIR,—Allow me to trespass on you for the purpose of correcting some errors you have fallen into in your 15th alias 340th Number at the head, and again at the close of your leading article in that Number you quote a sentence of a letter published by me in a recent Number of the *Medical Gazette*, to the effect, that of the 3000 odd hundred practitioners of medicine of London, the 200 Licentiates of the College of Physicians are alone *ostensibly* qualified for such practice by appropriate studies and examinations. Now from haste, forgetfulness, or some other cause of error you have made two or three strange mistakes regarding that passage.

1. You mistake or appear to mistake the writer. The Editor whoever he may be can have no other than an official acquaintance with it. I, the writer of it, am but an anonymous Correspondent of his, unknown to him so far as I know and wholly ignorant of his views except so far as they appear in his leading articles. The Gazette is therefore in no degree responsible for the correctness of the statements of "Civis Medicus."

2. You mistake the object as well as the author of that statement. My object was neither to praise the Licentiates nor depreciate the surgeons and apothecaries who practise physic; but to illustrate my position; that owing to the mismanagement of the College of Physicians, the regulation of medical practice had virtually passed out of its hands into the keeping of the College of Surgeons and Apothecaries, and that the public health had been consequently transferred from the care of the best-informed class of physicians (viz., the Licentiates of the Royal College of Physicians, of which, fellows included, for they likewise, though you seem to have forgotten it, are Licentiates, there are at present about 200 in practice in London) to that of two very inferior classes of physicians, viz.: 1. Surgeons who (vide curriculum of College of Surgeons) study medicine little and are not, if I am rightly informed at all questioned on strictly medical subjects—and 2. Apothecaries whose professional studies exclusive of pharmacy are usually limited to between two and two and a half years of hurried preparation.

In the whole paragraph there is neither praise or blame in a moral sense attached to any but the Royal College of Physicians. To say that the ill taught are

ill informed, and the better taught are better informed is to state not an opinion but a fact—further, to say that patients treated for *medical* diseases by London surgeons or apothecaries are provided with professional advice of an inferior quality, and that such patients would, if treated by London licentiate physicians *ceteris paribus*, incur much less risk of maltreatment and enjoy a considerably better prospect of cure;—surely to make such an assertion is again to state not a mere opinion, but a demonstrable fact. If I should assert that the licentiates of the Royal College of Physicians are as good surgeons as the gentlemen of Lincoln's Inn-fields, or as skilful in druggery and compounding as the licentiates of the Hall, what would you say? Which would you call it, quizzing or fibbing?

If you will insert this in your next Number, I shall feel obliged and remain Sir your very obedient

CIVIS MEDICUS.

Jan. 8, 1834.

The communication of a "Bombay Assistant Surgeon," inserted in this week's LANCET (page 592), is, on many accounts, an exceedingly interesting document. It is to be hoped that the concluding portion of the letter will not fail to attract the attention of the Board of Directors of the Hon. East India Company.

NOTE FROM DR. JAMES JOHNSON.

To the Editor of THE LANCET.

SIR,—In the last Number of the *Medical Gazette*, there is a heading in the table of contents, thus,—"Combination against the *Medical Gazette*;" and in the leading article this alleged fact is attempted to be substantiated as follows:—I am made to say, in the Westminster Medical Society, that I "had entered into an arrangement with THE LANCET," &c. The editor goes on to say, that, "in the account which has been published of this, a good deal of *dressing* has been had recourse to, and the distinct avowal that overtures had been made and accepted, is glossed over." Now, Sir, the whole of this is a fabrication. There is not one word of truth in it. I never made any statement of the kind, as one hundred witnesses, including your reporter, can testify. The allegation, in the above passage, is as false as the statement itself. I have entered into no combination of the kind, or of any kind, with THE LANCET, or any other journal; nor have I either time or inclination to form coalitions, leagues, or cabals, against the *Medical Gazette*. I pity the man who could descend to such disreputable misrepresentations with the view of injuring a contemporary journalist. To his list of inconsistencies, collected from the *Medico-Chirurgical Review*, and occupying so many columns of the *Gazette*, the editor is perfectly welcome. I am only sorry that he did not make a selection from my journal more useful and instructive to his readers. I am, Sir, yours, &c.

JAMES JOHNSON.

January 7th, 1834.

P.S. As I never yet have done or said anything which I am ashamed or afraid to avow, so I have no hesitation in admitting that I have been mistaken as to the author of the paper attributed to Dr. Dill. The *Gazette* was published on the day the statement was made in the Society, and I did not see it till just before I went there. I did, at the moment, think it was Dr. Dill's, being certain that it was not my own, in consequence of having myself noticed Mr. Lawrence's paper in another part of my journal, and remarked on the similarity of our sentiments. As doubts arose in my mind a day or two afterwards, I omitted Dr. Dill's name in my own journal, as may be seen. It is well known that, about the period in question, I suffered a severe and protracted illness, during which I could not even correct the press. But the editor of the *Gazette* thinks he can detect my style in the said paper. To show the fallacy of this proof, I beg to draw his attention to a passage on which he lays great stress, and which he thinks I cannot evade, it is at page 536, beginning, "turn which way we will," &c. This quotation, if written by me, would certainly show me to be very inconsistent with myself. However, on the very day after the charge was published, the author of the passage came and avowed himself; and, moreover, volunteered to communicate his name to the editor of the *Medical Gazette*—and he will do so. This shows how easily a style may be imitated. The author of the passage considered as mine, is well known to my contemporary, who will not doubt his assertion. J. J.

*** Our reporter fully confirms the statement of Dr. JOHNSON, that not one word was uttered by Dr. JOHNSON respecting his having "entered into any arrangement with THE LANCET." When will the fabrications of the FABRICATOR cease?—ED. L

NOTE FROM DR. JAMES SOMERVILLE.

To the Editor of THE LANCET.

SIR,—In reference to your report of the proceedings of the *Westminster Medical Society*, I will thank you to state that I made no allusion to any *recent* circumstance in the refusal to Dr. W. Thomson to make drawings from preparations in the Museum of the College of Surgeons, while I trust that no one will think me capable of making any reflection on the Curator, to whom the Museum is indebted for much of its value, and whose liberarality, and truly scientific zeal, have no warmer admirers than

Your most obedient Servant,
JAMES C. SOMERVILLE.

5, Saville-row, Dec. 28, 1833.

*** This note, received in the early part of last week, was, we regret to say, accidentally omitted in THE LANCET of January 4th.

ARMY AND NAVY SURGEONS.

To the Editor of THE LANCET.

SIR,—In your leading article upon the GREGORIAN controversy, might you not say a word or two in favour of a class, in the assertion of whose just rights I have taken no small pains, without at all injuring your argument, but on the contrary? I allude to the naval and army surgeons. Of the medical practitioners of this country it is alleged, that "200 only, being the Licentiates of the College of Physicians, are ostensibly qualified by appropriate studies and examinations" for the discharge of their duties.

The meaning of this assertion is, that the aforesaid Licentiates have combined the separate studies of anatomy and medicine with their different branches and subdivisions. Upon this showing, it may be urged that the medical officers in the King's service belong to the *élite* of the medical corps, and must be admitted along with the *exclusives* as equally well qualified. You are aware that in the King's service we practise, being duly qualified "by appropriate studies and examinations," in all those branches of the art which, amongst you civilians, are held as distinct and immiscible as are the castes among the Hindoos. I do not suppose it would be pleasing to the transcendental school to find a class whom they profess to hold very cheap placed in the same rank with them, and by the force of their own arguments.

I am, Sir, yours truly,
PETER COSGREAVE.

14, Surrey-street, Strand.
January 7, 1834.

NOTES BY GRACCHUS.

No. 2.—TO THE SCRIBBLER IN GREEN.

MY DEAR GREEN,—In this short note I shall only call your attention to two or three points. First, to a contemplation of the influence which your Journal exerts over the profession;—Secondly, to the condition in which you have placed your *henchman*, Dr. Gregory;—and, Thirdly, to the probable result of your present course of medical policy.

First, the strenuous efforts which you have made, for weeks past, to browbeat the advocates of a uniform system of medical education, and of ONE FACULTY for organising and superintending education and practice, by which system they hoped to place what you call the *lower orders* of the profession on a more respectable footing, have doubled the number of those advocates in the *Westminster Medical Society*, and diminished that of the opponents to one half! Now, as it is just possible that the members of the *Westminster Medical Society* are not materially different in their feelings and sentiments from their brethren at large, an inference may be drawn from recent events not very palatable to yourself or your partisans.

Secondly, consider, my dear Sir, for a moment, the situation of your agent, or rather your victim, Dr. GREGORY. You first induced him to desert, or rather to betray, his reforming associates, and then you left him, as the dark designing Monk left his wretched tool, QUASIMODO, the Hunchback, in the stocks, to writhe beneath the scoffs and scorn of an insulting multitude!! Your poor bell-ringer's situation in the chair of the *Westminster Medical Society*, could scarcely be envied by any one who was not in the cart on his way to the gallows! Like his prototype of *Notre Dame*, poor GREGORY had little superfluous reputation for *nous* to spare; but of that little you have completely deprived him. He, like others whom I could name, had little need of any medico-political checks to professional progress; but this last transaction, to which you prompted your weak and ill-judging friend, will throw him back twenty years in the estimation of his brethren.

Thirdly, do you really expect my friend Green, that, by raking up the embers of extinct quarrels and animosities, you will be able to kindle up a literary warfare between two of your contemporaries? Will this laudable attempt be viewed by the profession as a proof of rectitude of intention on your part, or only as a bent for personal spleen and malice? Believe me, my friend, this enterprise will end in disappointment, if not in disgrace. The

revival of feuds and forays, two or three hundred years ago, in the highlands and islands, where one chieftain burnt the clan of another, as in Macleod's case, or slaughtered them at midnight, as in the valley of Glencoe, was all very well, and in keeping with those times, but the attempt to renew hostilities, and embroil medical journals in professional altercations and abuse, will, I apprehend, meet with little encouragement in the present day, and can only draw down just indignation on the personally interested motives of such agitators. If the parties thus incited to action have but half the prudence for which I give them credit, they will turn a deaf ear to your war-whoop, oppose reasoning to invective, and pursue their labours in support of liberal reform against the leaden despotism of feudal and monastic institutions. In my next note, I shall calmly examine some of your, or rather your party's, arguments against uniformity of medical education, and the elevation of the "inferior orders" of the profession, to a higher rank and title than they at present possess. Mean time, let me counsel you as a friend, my dear Green, though you may think me your enemy, to let your liver cool, and to lie down on your pillow in peace with your neighbours, so that your sleep may be more refreshing, your tongue cleaner in the morning, and your complexion less tinged with bile and spleen than it is at present. Twelve months hence you will thank me in your heart for this salutary advice.

Yours,

GRACCHUS.

Jan. 6th, 1834.

SUNDAY ADVICE IN CONDUIT-STREET.

To the Editor of THE LANCET.

SIR,—"Otium cum dignitate" is the motto usually given to men who retire from a life spent in useful labour; but I would suggest the adoption of "otium cum *indignitate*" by a certain surgical Baronet. Whether he be worthy of it or not let the following show:—Sir A. Cooper announces that he may be consulted at his house in Conduit-street every Sunday morning, and many persons flock thither to avail themselves of his well-known skill in surgical cases, and his supposed skill in medical cases. But what is their astonishment at finding on arrival that the worthy baronet acts by deputy! A man who has a shop in Poland-street, Oxford-street, sees and prescribes for those who flock to Conduit-st. on Sundays to consult the great Sir A., and he of Poland-street having prescribed for them such medicines as are suitable to his object, desires them to go to 11, Poland-street, with the prescriptions, and in some instances writes the address on the back thereof, and I am told he personally superintends the dispensing in Poland-street in the afternoon; but this I cannot vouch. Now whether such a system as this be creditable to a man who professes to entertain the greatest liberality of feeling towards his medical brethren, I leave the world to judge. It certainly looks to me very like going down the professional ladder.

I am, Sir, your obedient Servant,

Dec. 1833. FAIR PLAY.

ROYAL VETERINARY COLLEGE.

To the Editor of THE LANCET.

SIR,—Although the valuable pages of your reforming Journal have been silent for a long period on veterinary abuses, yet we have no reason to suppose that you will withhold its powerful advocacy from the oppressed pupils of veterinary science.

Perhaps you were deterred from further exposures of the venality and inefficiency of the St. Pancras school by the apparent difficulty of producing any beneficial change in a system so fraught with corruption,—so completely vitiated from its original intention and objects, and so irresponsible in the persons of its officers.

But, Sir, the lash of well-deserved criticism is seldom applied in vain, and we have to return our thanks to you, the first who boldly took up our cause, for the tardy abolition of more than one malpractice, though trifling indeed when compared with the mass of Augean impurity which still blockades the path of science at this fallacious representation of a British veterinary school, by courtesy called the "Royal College."

I allude in particular to a recent resolution of the governors, according to which a pupil is obliged to pass at least twelve months at the school before he can obtain his diploma, which had formerly been frequently granted after four or six months, his application having been directed exclusively to the acquisition of Mr. Coleman's peculiar doctrines. This protecting concession was wrung from the ruling powers by the exertions of the liberal press, and chiefly through the instrumentality of THE LANCET.

But since your Argus eye has slumbered, or been directed to other more pressing objects, we have no further act of refor-

mation to record, but, on the contrary, a series of impositions have been commenced and enforced against the pecuniary interests of the helpless pupils which were never heard of or known before; and I doubt not your medical readers, as well as yourself, will be astonished at the amount of exactions under which they labour.

The intentions of the original founders of the Veterinary College will be found in a pamphlet published at its first institution in 1792.—"Rule 5th. Persons qualified according to the rules, will be admitted into the College on paying (to the establishment) twenty guineas, which will constitute them perpetual pupils." And it then proceeds to point out the course of instruction to be pursued, including a course of "*Zootomy*," another "*On the exterior knowledge of the Horse*," a course of "*Operations*," and one on "*Pharmacy and Medical Botany*," together with instructions in the "*Shoeing Department*;"—all comprehended for the sum which is now received by the Professor alone.

Until within these few years past the sum of twenty guineas has been the regular admission-fee of a pupil paid to Mr. Coleman, purporting to include every expense excepting the charge for his examination, and for which he was to receive a thorough education in "the principles and practice of the veterinary art." Without inquiring in this place whether the contract was fulfilled, or what advantages the pupil enjoyed in return for his money, beyond the opportunity of hearing one long course of Mr. Coleman's lectures, the sum of twenty guineas must certainly be allowed as a very sufficient, if not an exorbitant consideration for all that he might or could learn at this imperfect institution. This was called the *initiatory fee*, and was the sum which a young man (perhaps of limited means) brought with him from the country in his pocket, and paid down before he could hear more than one specimen of the ingenious sophistry of the learned Professor. But now this *initiatory fee*, which he had been taught to expect included all things, turns out to be but the beginning of expenses. For of late years, Mr. Assistant Sewell, anxious to become a lecturer, has undertaken to give a short series of discourses, under the head of surgical lectures; not gratuitously nor on Mr. Coleman's account, but for his own peculiar benefit. Now, as Mr. Sewell is an influential person in the College, and moreover has lately been appointed one of the examining committee, each of the pupils is virtually obliged to find five guineas for him, or hazard the heavier penalty of rejection.

In the next place there is attached to the staff of the establishment a gentleman named Morton, who fills the office of clerk to the concern, and compounds the few drugs and simples which are directed by his superiors. Following the bent of their conduct, he is also on the alert to cut and secure his share of the wool from the young flock, and professing to give private lectures on pharmacy, he has lately obtained, from nearly all of the pupils, the sum of two guineas each.

Although precluded (I believe by a special rule) from being a veterinary surgeon, this gentleman is still, from his situation and office, a personage of consequence and interest, without whose favour it is difficult to succeed; and, excepting to his pupils, the science of the materia medica is a sealed book at the College.

Again, the official demonstrator, Mr. Sewell, scarcely ever enters the dissecting-room;—but the pupils are mostly willing to give the Professor's Assistant, Mr. Vines, a small acknowledgment of only one guinea a-piece for his laborious attendance and anatomical information.

Furthermore, it would be as likely by "taking thought" for a pupil to "raise his stature one cubit," as that he should pass his examination simply by dint of practical knowledge, study, and dissections; or, in a word, by accomplishment in all that elsewhere constitutes an enlightened veterinarian. He had better divest himself of all this, and imbibe another kind of qualification, viz. a ready knowledge of all Mr. Coleman's fanciful theories, and elsewhere obsolete measures. For this purpose there is an academy at hand, kept by a Mr. Spooner, who perfectly understands this branch of science, and whose charge is from three to five guineas. This cramming process is, in fact, deemed absolutely necessary to the attainment of a diploma.

The present expense of obtaining this piece of paper stands nearly thus:—

	£		
Mr. Coleman's initiatory fee	21	0	0
Mr. Sewell's lectures	5	5	0
Mr. Vines's demonstrations ..	1	1	0
Mr. Morton's information ..	2	2	0
Mr. Spooner's grinding	5	5	0
Examination fee	3	3	0
	£37	16	0

By this it appears that above 70 unsuspecting pupils are obliged to spend nearly 40 guineas each instead of the 20 which they had been taught to expect would bear them harmless, and which goes at once into the pocket of the professor, who

in return gives a course of lectures and occasional colloquial repasts. There can be no objection whatever to multiplying information, whether by lectures or otherwise, but why are not the subordinates paid out of the ample *initiatory fee*, instead of being allowed to draw so heavily on the veterinary student, who has in that fee given a full equivalent for all they can teach him? We know not whether these exactions, all of recent date, are made with or without the knowledge of the Governors of the College,—to whom perhaps this statement should with propriety have been addressed,—but those gentlemen have heretofore proved themselves so careless of the interests of the profession that there is not much reason to hope for a remedy from their intervention. In the meantime, Mr. Editor, I trust you will endeavour to support the oppressed parties, as you have done before, and direct the blame to fall where it is due; and should you favour me by inserting this paper, I may hereafter call attention to some other obnoxious weeds which are flourishing in the rank soil of this abused institution.

I am, Sir,
Yours very respectfully.
CHARLES CLARK.

Veterinary Infirmary, 24, Stamford-street, Jan. 8, 1834.

LONDON UNIVERSITY AND KING'S COLLEGE.—We may take the number of persons actually attending at the two institutions to be as follows:—

	K. Coll.	Univ.
Medical School	90 ..	314
General School	110 ..	110
Junior School.....	300 ..	260
Total....	500 ..	684

The number of students attending the medical classes is:—

Anatomy	60 ..	224
Demonstrations	62 ..	213
Chemistry	62 ..	171
Midwifery	49 ..	92
Medical Jurisprudence..	45 ..	38

—*Letter in the Athenæum, Dec. 7, 1833.*

CORRESPONDENTS.

The person who printed a letter in the last No. of MACLEOD'S MOCK, signed "A Guy's Pupil," has taken the pains to write a wilful mis-statement,—a circumstance which can reflect disgrace only on himself. No such letter as the one addressed "To the Editor of THE LANCET," inserted in the columns of the MOCK, has been received at THE LANCET Office.

A Student.—The Middlesex is, certainly, at the present, the most convenient Hospital for the students of the University, and the clinical remarks of Sir CHARLES BELL are always instructive. The lectures named by our correspondent are judiciously chosen; but those on COMPARATIVE ANATOMY, delivered by Professor GRANT, ought not to be neglected. The practitioner who knows human anatomy only, is not the tenth part of an anatomist. With only an imperfect acquaintance with comparative anatomy, the student is enabled to acquire and retain a knowledge of human anatomy, which is certain to afford him confidence in practice, and to secure for him a conspicuous station in the scientific ranks of his profession.

We are compelled to postpone, until our next Number, the publication of *Dr. Smyth's* case of false aneurysm of the ascending portion of the arch of the aorta, and rupture, with effusion of blood into the pericardium.

The communications of *Mr. Gravenor*, —*Mr. Bree* (on Iodine) - *A Scottish Practitioner*, —*A Suffolk Practitioner*,—*Adams's* case, &c., next week.

Mr. Jones must favour us with carefully-drawn outlines of his proposed instruments and apparatus. The sketches before us are not by any means clear enough for the engraver.

The next meetings of the *Medico-Botanical Society* and the *Medico-Chirurgical Society* take place on the 14th inst.

LITERARY INTELLIGENCE.—Dr. Wilson Philip is preparing a work "On the Effects of Minute Doses of Mercury in Combination with the Appropriate Treatment of Various Diseases in restoring the Functions of Health."

Owen Reardon.—A brief notice of the interview was published in THE LANCET of last week.

A Country Gentleman.—Certainly, as "surgeon" but not legally as an "apothecary."

A Poor Country Practitioner.—Before giving a reply, it is necessary that we should see an exact copy of the agreement between the parties.

L. M.—The "him" was of course a typographical error. Any school-boy must know that the word should be "his."

Mr. Hendley.—We received a copy of the report, for which we feel obliged, but the case presents nothing new either in law or in fact. Surgeons have recovered for attendance, for centuries, and the *medical* part of the case was thrown out of court. Nothing is now better understood than that apothecaries can legally charge for attendance.